Industrial

November 1945

Standardization

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Delegates from United Nations Start Organization of Permanent International Standards Association

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Some 2000 Industrial concerns hold membership either directly or by group arrangement through their respective trade associations

Readers Write

Checking Flatness on Machined Surfaces

Library of Industrial Research

Gentlemen: We will deeply appreciate any information you may give us relative to checking flatness on various machined surfaces. References to other authoritative sources, where we may obtain additional information will be gratefully received.

J. L. WALKER,
Assistant Director of Research

• • Since the information available at the American Standards Association has to do exclusively with standards and specifications, the ASA Library referred Mr. Walker to the National Bureau of Standards at Washington.

Safety Clothing a Peacetime Project?

Safety Incorporated

Gentlemen: I certainly hope there is going to be some way of turning the specifications [for Linemen's Protective Equipment, J6 and for Protective Occupational Clothing, L18] into a peacetime standard. I know of no unit or group of units of safety equipment that need good specifications as do safety clothing of various kinds. Every effort should be made not to let the good work that has been done as a war standard go to waste. The basic work is done. I certainly hope that a sponsor can be found to carry on for peacetime specifications.

MARK A. BULOT

• • The American Standards Association will be glad to take whatever action the organizations concerned request.

Oops, Sorry!

Hartford Accident and Indemnity Company

Gentlemen: The outside back cover of the August, 1945, issue of INDUSTRIAL STANDARDIZATION contained an announcement of American War Standard Safety Color Code for Marking Physical Hazards and Identification of Certain Equipment and gave the code number as being Z54.1-1945. On October 16 we wrote a memorandum to our Office Manager's Department asking them to order 50 copies of this code and today we received 50 copies of the Safety Code for the Industrial Use of X-Rays, Part 1. We note that the code number appearing in the upper right-hand corner of this code is Z54.1-1945, so we believe that the wrong code number must have been given in the announcement referred to above.

H. J. POTTER
Supervising Engineer

• • Mr. Potter is perfectly right, and we sincerely regret that we caused

our readers unnecessary trouble. The designating number for the Safety Color Code is Z53.1-1945. The Safety Code for the Industrial Use of X-Rays is Z54.1-1945.

List of American Standards for British Columbia

The British Columbia Industrial and Scientific Research Council

Gentlemen: We are engaged in metallurgical research for metal manufacturers and consumers in British Columbia, and are attempting to build up comprehensive technical data files. We should like very much to receive, if possible, a new list of approved American Standards and War Standards.

J. M. CUMMINGS
Acting Head, Division of Mining & Metallurgy

• • The American Standards Association was pleased to send its list of standards and information about its work to the British Columbia Industrial and Scientific Research Council.

Safety Color Code a Contribution to Industry

The Sherwin-Williams Co

Gentlemen: I received the final copy of the American War Standard Safety Color Code for Marking Physical Hazards, and you should be congratulated in steering this project through to successful completion. This standard will serve for some time to come, not only as a war standard but as a peacetime standard as well. The fact that it was developed under the pressure of wartime production does not detract in any way from its value and application to the requirements of everyday factory maintenance. You have made a distinct contribution, through this standardization which eliminates a great deal of cross-purpose thinking, not only to the people who supply paint, but also to industry itself, providing it with a logical and consistent means of standardizing its selection of colors for identification of hazards.

JAMES A. MEACHAM
Manager, Maintenance Sales Department

Our Front Cover

The London and New York secretaries of the United Nations Standards Coordinating Committee confer with delegates during the international meetings on standards in New York, October 8 through 10. Left to right: H. J. Wollner, secretary in charge of the UNSCC New York office; P. G. Agnew, American Standards Association; J. Morel, Belgium; Colonel H. Wang, China; C. le-Maistre, secretary in charge, London office.

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The Pictures— Page 239, Charles Phelps Cushing; 241, New York City Dept of Public Works; 245, Westinghouse.

November, 1945 Ruth E. Mason, Editor 35 Cents

Standardization is dynamic, not static. It means not to stand still, but to move forward together.

Subscription price $4.00 per year (foreign $5.00). Special to schools and libraries $2.00 (foreign $3.00). Re-entered as 2nd Class Matter 7/31/43, at the Post Office, New York, N. Y., Act of March 3, 1879.

Delegates and guests at the United Nations conference on standardization as they assembled in New York to start work on organization of a new international standards association.

Left to right, standing: J. Morel (Belgium); Ignacio Aguerreberre (Mexico); Manuel Torres Torija (Mexico); Colonel W. E. McCaffray (Canada); Colonel H. Wang (China); P. G. Agnew (USA); L. Ruppert (United Nations Standards Coordinating Committee, London); C. le Maistre (United Nations Standards Coordinating Committee, London); Cyril Ainsworth (ASA staff); H. J. Wollner (United Nations Standards Coordinating Committee, New York); E. A. Pratt, (ASA staff). Left to right, seated: W. Rayner Hebblewhite (Australia); Sidney H. Haughton (South Africa); S. T. Shang (China); H. S. Osborne (USA); General P. Salmon (France); James G. Morrow (Canada); Percy Good (Great Britain); G. E. Harrison (Great Britain).

Delegates from other countries compare notes following the meetings

Left to right: S. T. Shang (China); Ignacio Aguerreberre (Mexico); General P. Salmon (France); W. Rayner Hebblewhite (Australia); Manuel Torres Torija (Mexico).

Permanent International Standards Organization Now Being Set Up

Delegates from standards associations of United Nations take important steps in setting up a new permanent international standards association. Formal conference is scheduled for May 27 through June 8, 1946, in London.

IMPORTANT steps in setting up a permnanent international standards organization were taken during the week of October 8 when the United Nations Standards Coordinating Committee held a series of meetings in New York. The meeting were attended by representatives of national standards associations in 13 countries, all members of the UNSCC which has been set up as an interim organization to unify standards needed during the war and for the immediate postwar period. Among those present were representatives from Australia, Belgium, Brazil, Canada, China, Denmark, France, Great Britain, Mexico, New Zealand, Norway, South Africa, and the United States of America.

International Cooperation More Important Now Than Ever Before

All of the delegates were of the opinion that international cooperation on standards will be of far greater importance after World War II than it was after World War I. For this reason the opinion was that the new organization will have to be broader, more strongly organized, and more amply financed and staffed than any such organizations have been up to the present time. It was estimated that the budget for the first year will be $40,000 with the possibility that it will be raised to $60,000 for the second year.

A draft constitution was drawn up which will be given final consideration at a formal conference to be held in London May 27 to June 8, 1946; and preliminary decisions were taken on various questions which may arise in setting up the new organization. These included the type of organization to be set up; methods of operation; the budget, and the dues to be collected from each national organization; and the procedure to be followed in closing up the old International Standards Association. The United Nations Standards Coordinating Committee plans to wind up its affairs and turn over its resources and work to the new organization as of July 1, 1946.

In planning the new organization, the pattern of the United Nations Organization was followed by the delegates. For example, they are giving China, France, Great Britain, the Union of Soviet Socialist Republics, and the United States of America the opportunity of serving on the proposed Administrative Committee continuously during the first five years, with two of the other six countries to be elected annually. This was done with the thought that it will strengthen the organization during its formative years.

The plan calls for the setting up of technical divisions as the growth of the work makes them necessary.

In order to further strengthen international cooperation, the International Electrotechnical Commission, which is working exclusively on international electrical standards, is to be invited to join the new organization and to become its electrical division, continuing the use of the name of the IEC and its procedures. Other organizations which are working on international standards, although not exclusively, such as the International Commission on Illumination, will be invited to affiliate with the new organization as regards their standardization work, on a mutually satisfactory basis.

Expect New Organization to Continue Work Already Started

It is expected that when the new international standards association is organized much of the work which had been started by the International Standards Association and other agencies before the war will be revived. The United Nations Standards Coordinating Committee, too, plans to wind up its affairs and turn over its resources and work to the new organization as of July 1, 1946. Work on international standards now going forward through the Committee includes: wool moisture regain; definition of rayon; manganese ore; safrol oil; food containers; heat treatment of steel; terms in the plastic industry; radio interference; airfield lighting; gas cylinders; shellac; extra high voltages; cylinder-filling pressures and ratios.

United Nations Standards Committee Enlarges Executive Committee

During the meetings, the Executive Committee of the UNSCC was reorganized and enlarged. It now includes:

James G. Morrow, Canadian Standards Association, *Chairman*
P. G. Agnew, American Standards Association
Percy Good, C.B.E., British Standards Institution
General P. Salmon, Commissaire a la Normalisation, France
S. T. Shang, Chinese Standards Committee
Dr. Ary F. Torres Associacao Brasileira de Norma Tecnicas, Brazil

While in New York, the delegates to the conference carried on extensive conversations with the staff of the American Standards Association on specific standards as well as on general policy matters. They were entertained by the American Standards Association at a reception in the Rainbow Room of the RCA Building, Rockefeller Center, and at a dinner at the Hotel Biltmore. Representatives of ASA Member-Bodies and Company Members were present at both functions.

State Department Entertains S. T. Shang

The Division of Cultural Relations of the U. S. State Department gave a luncheon Friday noon, November 2, in honor of S. T. Shang, Secretary-General of the Chinese Standards Committee.

Representatives of Government agencies particularly interested in standards, as well as of industrial standardization organizations, attended the luncheon.

Active Standards Program Helps China's Industries

By S. T. Shang

Standards work is centralized in Chinese Standards Committee. New Government bureau now being organized is expected to make some standards mandatory.

WORK on a broad program of national standardization in China began in December 1943 when the Chinese Standards Committee was reorganized under the Ministry of Economic Affairs. Prior to this time progress had been made on certain important problems, but no coordinated national standards program had been attempted.

Now, after a year and a half of work, 45 Chinese National Standards have been developed and promulgated, and many more are in process of development. During the first two years we have succeeded in launching a broad coordinated program of standards development, and also in substantially centralizing this work in one national agency. The actual development work has, of course, only begun, but the standards organization, committee structure, and procedures, and the plan of standards development have been formed, are in use, and are ready for the large task which lies ahead.

One of the early steps in the development of national standards was taken in 1928 when the metric system of weights and measures and a standard Chinese market system easily convertible into the metric system were established by law. Since that time substantial progress toward unification of Chinese practice on the metric system has been made, although a good deal of work remains to be done in the future before it can be said that China's industrial and trade practice is unified on the metric system.

Standards Developed Under Bureau of Weights and Measures

These standards of weights and measures were developed under the auspices of the Bureau of Weights and Measures which had been founded in 1927 under the Ministry of Economic Affairs. The principal function of the Bureau was to administer the weights and measures laws, but it also initiated a program for development of national industrial standards. During the years between 1933 and the reorganization of the Chinese Standards Committee in 1943, the staff of the Bureau collected more than 20,000 specifications from the United States, England, Germany, France, the Soviet Union, Japan, and other countries. About 4,000 of these were translated into Chinese with the aid of the information obtained about 870 draft standards were prepared. Because of many problems, however, none of these draft standards could be promulgated until the reorganization of the Chinese Standards Committee on December 29, 1943.

S. T. Shang is secretary-general of the Chinese Standards Committee, Ministry of Economic Affairs.

During these past 15 years, despite the problems that prevented standardization from going forward as a coordinated national program, a good deal of standards work was accomplished. Technical and scientific terms have been standardized by committees of educators, engineers, and scientists working with the Ministry of Education. This work, which is basic to all standards, is still continuing.

Some work on basic standards for railroads and other communications has also been carried forward by the Ministry of Communications.

Standards for certain export commodities had been completed and put into use before the war by the Bureau of Testing and Inspection of Commercial Commodities to control the quality of Chinese exports.

The Bureau of Agricultural Research had also developed tentative standards for rice and wheat and these had just been introduced to control the quality of rice shipped from Central China to South China, and of wheat used by the large-scale flour mills when the war forced the discontinuation of this important work.

A book of standards for drugs, the Chinese Pharmacopoeia, had been published before the war, but in this case also it has been impossible to continue under wartime conditions.

Need Standards for China's Economic Development

All of this work was, and of course still is, necessary for the economic development of China. But the effort was seriously inadequate, first because great areas of necessary standards, such as the whole field of standard specifications for industry, remained to be developed; and secondly, because the procedures and organization needed strengthening before the various programs could be coordinated into a consistent, mutually reinforcing system of national

A magazine, published every half year by the Chinese Standards Committee, keeps the members of the Committee and others concerned with the work informed about the Committee's activities. The first issue, published for the first half of 1944, contained articles about the organization of the Committee, reports of the technical work, information about standardization work in other countries, and a discussion of the metric system in the United States. A translation from a Russian publication on standards described the standardization work in that country. A translation of the article "International Sheet Metal Standard Would Help Inter-American Trade," by R. E. Hellmund, from the February 1942 issue of INDUSTRIAL STANDARDIZATION, was also included.

standards. These deficiencies were recognized by many leaders in industry and government. As a result, the Chinese Standards Committee was reorganized under the Ministry of Economic Affairs by authority from the Executive Yuan. Mr. B. Tann, Vice-Minister of Economic Affairs, has been appointed chairman.

The CSC, although it is organized under the Ministry of Economic Affairs, includes members from all of the various ministries which have a direct interest in standardization, from universities, and also from private industry.

Technical Committees Set Up to Develop Standards

During the current year, as a result of the experience gained during the first year of its work, the CSC has reorganized its committee structure, the membership of its committees, its standards development procedure, and has completed a plan of standards development. As a result of this reorganization, technical committees covering the following fields are now organized and working: textile, mechanical, electrical, mining and metallurgy, civil engineering, chemical, drugs and hospital supplies, and automotive. A committee for agricultural and forestry products is currently being formed.

Technical subcommittees have been organized under these major committees and there are more than 700 technically qualified members actively participating in the committee work.

New Bureau to Work on Putting Standards to Use

The important task on which we have not yet made adequate progress is the job of extending standards into use. Just beginning our industrial development as we are, we have an opportunity as well as an urgent need for extending standards into immediate use. In recognition of this, the Sixth Kuomintang Congress which met last June has instructed the National Government to organize a Central Bureau of Standards. The laws that are required for the establishment of this bureau have not been enacted as yet, but it is expected that the functions of the Bureau will include those now performed by the CSC and the Bureau of Weights and Measures. In addition, the Bureau will be given a large share of the responsibility and powers necessary to extend standards into industrial, agricultural, and trade practice.

Under the new arrangement, it is expected that the Chinese Standards Committee, its committees, procedure, and plan for standards development, will remain as they are, but will be strengthened by the new organization. The new Bureau will provide more adequate staff, will strengthen the weights and measures work, and will provide a certification plan and other methods for extending standards into use. With these facilities and tools at hand, we in the government service, and all the engineers of China, look forward to continuing the vigorous and well organized plan of standardization that we know is necessary for the effective and rapid industrialization of our country.

Approved Chinese Standards to Be in ASA Library

Copies of all standards completed by the Chinese Standards Committee will soon be on file in the Library of the American Standards Association. Those completed to date include:

Mechanical—
- Preferred numbers
- Paper sizes
- Diameters and speeds for transmission shafts
- Reference temperature
- Inspection test for machine tools
- Conversion tables for industrial use (inches to millimeters; millimeters to inches; and feet to millimeters)

Electrical—
- Wire gage
- Copper resistance
- Nominal voltage of power transmission and distribution
- Standard for the direction of rotation of controllers and indicator lamp of circuit breakers
- Standard frequency of power plant

Automobile—
- Specifications for the inspection of automobile parts

Non-ferrous Materials and Metallurgy
- Copper
- Lead
- Aluminum
- Zinc

Ferrous Materials and Metallurgy—
- Symbols for iron and steel—for shapes, and for manufacture
- Round steel bars
- Square steel bars
- Hexagon steel bars
- Octagon steel bars

Chemical Industry—
- Coal and coke; standard methods for analysis of
- Tung oil, specification and methods of test for
- Raw linseed oil for paints, specification and methods of test
- Basic carbonate white lead for paints, specification for
- Basic sulphate white lead for paint, specification for
- Lithopone for paints, specification for
- Titanium dioxide for paints, specification for
- Hydrochloric acid used for chemical analysis, specification for
- Hydrochloric acid for industrial uses, specification for
- Nitric acid used for chemical analysis, specification for
- Nitric acid for industrial uses, specification for
- Sulphuric acid used for chemical analysis, specification for
- Sulphuric acid for industrial uses, specification for
- Sodium hydroxide used for chemical analysis, specification for
- Sodium hydroxide for industrial uses, specification for
- Sodium carbonate used for chemical analysis, specification for
- Sodium carbonate for industrial uses, specification for
- Lubricants, standard method of test for
- Commercial ethyl alcohol, specification for
- Glycerine for industrial uses (A) High gravity and (B) yellow distillate
- Gasoline, standard method for testing

Babcock & Wilcox Associated with Atomic Bomb Research

The Babcock and Wilcox Company plant at Barberton, Ohio, played an important part in the development of the atomic bomb, the company announces. Alfred Iddles, chairman of the Mechanical Standards Committee of the American Standards Association, is vice-president of the company. Security regulations do not permit further disclosure as to the nature of the plant's association with the history-making research.

Danish Standards Association Has Active Standards Program

By H. E. Glahn

Secretary,
Dansk Standardiseringsraad

DANSK STANDARDISERINGSRAAD, the national standardization association of Denmark, has been active in international as well as national standardization work since its organization in 1926. Now that the long period of isolation due to the German occupation is over, we are looking forward to resuming our pleasant relations with other national organizations.

Despite the fact that we were cut off from the rest of the world, the German occupation was not too difficult for us. All efforts on the part of the Germans to dominate our work were turned aside by us with evasions and by delaying action. Fortunately, they did not press the matter too closely, and we were therefore able to continue our work much as before.

Association Supported Partly by Government

Our association is a private organization, partly supported by the Government, and with a membership of 22 national associations, Government departments, and technical societies. The interest of the Government in our work is indicated by the fact that the following departments are members: the Navy Department, the War Department, the Department of Commerce, the Department of Agriculture, the Communications Department, and the Department of Technical Universities. Representatives of these 22 organizations make up our governing body.

The actual work on standards is done by technical committees, which must be fully representative of what we call in Denmark, the three F's: the Fabrikant (manufacturers); the Forhandler (dealers); and the Forbruger (the consumers). In some cases, these consumers are industrial users of the equipment for which the standards have been developed; in other cases, they are women housekeepers who are concerned with the use of the standard. A standard for the size and shape of the bottles used for fruit juices is a recent standard in which these women consumers have been interested, for example. We have also recently started a study of the measurements of 6,000 girls to obtain information for the development of standard sizes for women's clothing.

The work of all our committees is backed by extensive research and by comparison of the standards of other countries.

Although Denmark is largely an agricultural country, the Dansk Standardiseringsraad does little work on standards for food. Standards for butter, eggs, and bacon, which are three of our largest export products, were set years ago by the Government, and are continued under Government control.

Packages, boxes, cans, and bottles, however, are the subject of an active standardization program. A recent standard, for example, brought about a reduction in the number of different sizes of paint cans from 76 to 5 sizes. This large reduction was facilitated through the use of the liter measure (roughly equivalent to a United States quart), rather than the kilogram which had formerly been used.

Hospital supplies and equipment constitute another important project on which we are making considerable progress at the present time. A particularly satisfactory accomplishment in this project has been the development of a new design for forks, which has eliminated the squared-off surface on the side of each tine, making it possible to clean the entire surface of the fork with one motion. This has resulted in a much more hygienic condition since it eliminates the possibility of any dirt remaining on the side of the tine.

Screw Threads, Limits and Fits, Drawings of Special Interest

In international standardization work, we are particularly interested in the development of fundamental standards, such as standards for screw threads, drawing practice, limits and fits for cylindrical parts, and rating of electrical machinery. In our own work, of course, our interest centers around such products as agricultural machinery, hospital material and equipment, electric and gas welding, water analysis, (for drinking water as well as for industrial use such as for leather and textiles), loading chains, and testing for oils and fats. One of the most recent standards completed for the use of industry is a lighting standard for improvement of efficiency and safety.

Danish national standards are widely used, largely because they are studied as part of the text material in technical universities. The fact that students in the schools become acquainted with the national standards during their training period means that when they are employed they turn naturally to these standards for the information they need in their jobs. The extent to which the standards are used is indicated by the fact that we sell 70,000 copies per year of the 500 standards approved by the Dansk Standardiseringsraad.

Standardization Necessary To Aid British Economy, Says Lord Woolton

The Rt Hon Lord Woolton, president of the British Standards Institution since 1944, has stated his views on the progress of British standardization in *Standards Review*, Volume I, 1945, a periodical of the British Standards Institution.

"Standardization," said Lord Woolton, "is one of the great basic principles of efficient production; it ensures the maximum of value per unit of price and affords the consumer full protection in guaranteeing a minimum standard of quality or performance."

In changing from war to peacetime conditions, he urged the active cooperation of producers, distributors, and consumers under the leadership of the British Standards Institution in the furthering of standardization work.

"If we are to maintain and improve our national standard of life," stated Lord Woolton, "we must take every step to increase the efficiency of our production and output per unit of labor. As a nation we cannot enjoy a higher standard of life until we have produced the material means of providing it; standardization can make an important contribution to this end."

"British Standards carry with them a hallmark of integrity and are a national asset of immeasurable value," he said.

Standards Activity in Norway Expands to Meet Postwar Needs

By Kaare Heiberg

INCREASED interest in standardization on the part of industry as the result of experience with standards during the war is the most noticeable postwar trend in the Norges Standardiserings-Forbund.

Our activities were not greatly affected by the German occupation. Although a representative from the German standards association visited us and suggested that we sign a contract for printing and using Norwegian standards in Germany and German standards in Norway, the suggestion was not followed up after we refused to do so. In some cases, the Germans did insist on the use of German standards, but in most instances the changeover that would have been necessary in order to put them into effect would have been too costly and time-consuming. For this reason, the Norwegian standards were continued in use in the majority of cases.

Association Stronger Now Than Before

Because it helped to prevent the encroachment of German standards on Norwegian industrial practices, the work of the Norges Standardiserings-Forbund has been given widespread and increasing encouragement by the representatives of Norwegian industry. For this reason, the association is now stronger than it has ever been in its history and is looking forward to an even greater expansion in its work now that the war is over.

Standards for use in the building industry are particularly important to us because of the tremendous backlog of needed building that has piled up during the war. Even before the war, Norwegian building had fallen behind the demand, and during the war, of course, no new buildings were constructed. In addition, some of the larger cities suffered considerable damage from bombings. Now, we are working hard on the development of standard building codes and standard dimensions for building equipment as well as for the buildings themselves to help meet this need. Up to the present time, for example, almost all kitchen cabinets and tables have been built to order. Our work on standard dimensions is intended to encourage the prefabrication of these items so that they can be purchased ready-made.

Because of this work, we are particularly interested in international standards for such equipment as bathtubs, refrigerators, and other items of bathroom and kitchen equipment which we import. It is important, of course, that the standard dimensions for this equipment should fit satisfactorily with the standard dimensions we select for our kitchens and bathrooms.

***Ing Kaare Heiberg** is Director of the Norges Standardiserings-Forbund, the national standardizing body in Norway.*

Standards developed by the Norges Standardiserings-Forbund are voluntary standards prepared by committees in which manufacturers, distributors, government agencies, and consumer groups are represented. They are put into effect primarily through voluntary acceptance by industry. Building codes, however, as well as some of the other standards such as paper sizes are adopted by municipalities and the Federal Government and become mandatory for use by all the Government groups. A uniform system of paper sizes based on the ISA (International Standards Association) system is in universal use throughout Norway by the Government and by the municipalities, and is widely used by all industrial and business groups. Whenever apples are sold by grade anywhere in Norway, they must by law meet the requirements of the Norwegian standard, must be packed in standard containers, and must be labeled with the grade according to the standard, the weight, the name of the producer, and other information of this nature for the benefit of the purchaser.

Our work is not by any means confined to industrial equipment or manufactured products. Agricultural products, too, rate high in our program, the standards consisting of specifications, methods of test, grading, and labeling.

The membership of the Norges Standardiserings-Forbund is made up of 35 engineering and trade associations, government departments, and technical societies, in addition to semi-official agencies. The work on standards is done by technical committees under the supervision of general committees in each field. These general committees cover such widely diversified subjects as mechanical engineering, shipbuilding, housebuilding, agriculture, iron and steel, drafting room practice, tins for the canning industry, glass containers, paper sizes, and hospital textiles and equipment. These committees must represent consumers, manufacturers, dealers, and science, and government in each field.

All of these committees have a common secretariat in the central office of the association, which has a staff of 11 people, among them five engineers and one architect.

International Standards Important in Norway

There is a keen interest in international standards in Norway because of the fact that we import so much material and equipment from other countries. Of particular concern to us are standards for iron and steel; dimensions, methods of test, and specifications for materials; screw threads; machine tools; shipbuilding details; pigments; and building equipment, such as bathtubs.

We are looking forward with pleasure to taking part again in international cooperation on standards, and to renewing the valuable exchange of experience and standards information that took place between our organization and the other standards bodies before the war.

British Standards Institution Announces Death of Sir Percy Ashley

Sir Percy Ashley, KBE, CB, Vice President and Past Chairman of the British Standards Institution died on September 13, 1945, according to a recent announcement of the BSI.

Sir Percy had taken an active interest in British standardization for many years prior to his becoming Chairman of the General Council of the British Standards Institution in which capacity he rendered great service during five war years.

At the time of his death, Sir Percy Ashley had served only a few months of his 1945 term as vice president of the British Standards Institution.

Delegates at International Conference Represented 13 of United Nations

The delegates who came to New York for the conferences to set up a new international standards association represented the national standards associations in 13 countries:

Australia—
W. Rayner Hebblewhite, Standards Association of Australia

Belgium—
J. Morel, Association Belge de Standardisation

Brazil—
Ary F. Torres, Associação Brasileira de Normas Técnicas

Canada—
James G. Morrow, Canadian Standards Association
Colonel W. R. McCaffrey, Canadian Standards Association

China—
S. T. Shang, Ministry of Economic Affairs, Chinese Standards Committee
Colonel H. Wang, Chinese Standards Committee

Denmark
Ing H. E. Glahn, Dansk Standardiseringsraad

France—
General P. Salmon, Commissaire a la Normalisation, Secretariat d'Etat a la Production Industrielle

Great Britain—
Percy Good, C.B.E., British Standards Institution
Miss G. E. Harrison, British Standards Institution

Mexico—
Ing Ignacio Aguerreberre, Dirección General de Normas
Ing Manuel Torres Torrija, Dirección General de Normas

Norway—
Kaare Heiberg, Norges Standardiserings-Forbund

New Zealand—
A. R. Galbraith, New Zealand Standards Institute
E. H. Langford, New Zealand Standards Institute

South Africa—
Sidney H. Haughton, Office of the Government Scientific Mission, South African Standards Institution

United States of America—
Howard Coonley, Chairman of the Board, Walworth Company; Past President, American Standards Association
P. G. Agnew, American Standards Association
H. S. Osborne, American Telephone & Telegraph Company; chairman, Standards Council, American Standards Association
E. C. Crittenden, Assistant Director, National Bureau of Standards
C. L. Warwick, Secretary, American Society for Testing Materials

H. S. Osborne, chairman of the Standards Council of the American Standards Association, presided at the first two sessions of the United Nations Standards conference; and P. G. Agnew, Secretary of the American Standards Association, presided at the last five sessions.

Purchasing Institute Names Postley President

P. G. Agnew Is Member of New Advisory Committee to Institute

Maurice G. Postley, superintendent of School Supplies of the Board of Education of the City of New York, has been elected president of the National Institute of Purchasing, the organization dedicated to improving governmental buying through research, development of standards and specifications, and commodity testing.

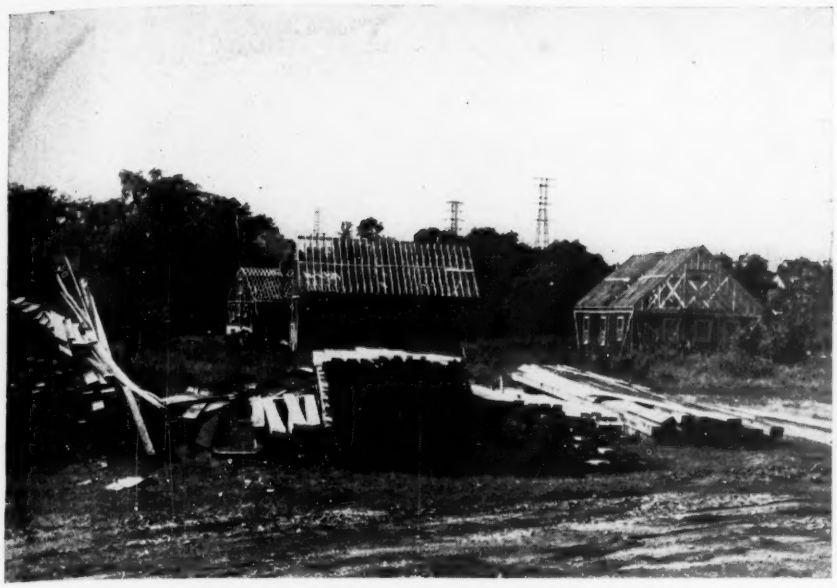
Mr. Postley's first official act was to appoint a new Advisory Council to the Institute. The members of the new Council are:

P. G. Agnew, Secretary, American Standards Association
Harold F. Burnworth, Director, Department of Supplies, City of Pittsburgh
Charles F. McCauley, Director of Purchases, Board of Auditors, Wayne County, Michigan
Virgil H. Hurless, Office of the Comptroller, Milwaukee, Wis
Clifton E. Mack, Director of Procurement, U.S. Treasury Department, Washington, D. C.
Willis S. MacLeod, Acting Deputy Director, Standards Branch, Procurement Division, U. S. Treasury Department, Washington, D. C.

The Annual Conference and Products Exhibit of the Institute will be held at Hotel Stevens, Chicago, Illinois, August 19-21, 1946. Joseph W. Nicholson, First Vice President of the Institute and City Purchasing Agent of Milwaukee, Wisconsin, is general conference chairman.

New State Code Based On American Standard for Cranes and Hoists

To serve as a guide for the prevention of accidents, the Division of Engineering and Safety of the New Jersey Department of Labor has published a new safety code entitled, Advisory Safety Code on Structural and Operating Rules for Safety of Cranes, Derricks, and Hoists, July, 1945. It is based entirely on the American Standard Safety Code for Cranes, Derricks and Hoists, B30.2-1943, developed under the procedure of the American Standards Association. Owners, users, and manufacturers of such equipment should, the Department expects, receive the greatest service from this safety guide.



New housing under construction, showing lumber collected at the site. The new coordination standards are intended to eliminate cutting and fitting of materials after delivery to the building site.

Basis for Building Coordination

By M. W. Adams

Two new standards state basic principles of coordination of building materials and equipment, and application of principles to masonry. Use of coordination principle is expected to eliminate cutting of building parts at the site, thus improving quality and reducing building cost.

DIMENSIONAL coordination is a fundamental building operation. However it is done, at some stage in their design, manufacture, or field erection materials and equipment must be sized so as to produce the building called for in the plan. Essentially, there is involved a coordination between the sizes of interfitting or adjacent parts in the structure and a correlation with the dimensions of the building.

Thus, dimensional coordination is an old and familiar problem that occurs in every building that is constructed. However, the methods by which it is accomplished differ widely and have an important influence on cost and efficiency, from the initial design and manufacture of building products to their final erection in the field.

ASA Project A62, for "the coordination of dimensions of building materials and equipment," was organized in 1939, with the American Institute of Architects and the Producers' Council, Inc sponsoring the work. The broad purpose of the project is to improve the economy, efficiency, and quality of building through simpler and more orderly procedures for dimensional coordination.

The methods that have been used differ basically according to where the fashioning of building parts in their finally coordinated sizes is performed. This may be a shop or factory process, or it may be accomplished by conventional methods during field erection. Often it is a combination of both, started in the factory and completed in the field.

The architect, by his plans, details, and specifications, dictates what particular methods are to be used. He fixes the dimensions of the building, specifies the materials to be delivered, and shows, by assembly details, how particular parts are to be combined. The assembly details may serve as instructions for the shop, for the builder, or for both. With many types of construction, however, these instructions are seldom complete, and much of the coordination must be performed by the builder under the architect's supervision. The amount of refabrication required in the field depends largely upon whether the sizes delivered to the job have been coordinated, and the extent to which the building dimensions have been correlated with these sizes. When the materials have not been previously coordinated, field refabrication is unavoidable.

A large part of the cutting and fitting that is characteristic of field operations is chargeable to the necessity for coordination. This field refabrication has by no means been limited to materials that are easy to cut, such as wood and brick; therefore special saws for glazed masonry and cutting tools for piping are usual field equipment. There are many products, particularly items of equipment, which cannot be altered in size after they leave the factory. As a result, these often require an excessive cutting of the adjacent parts and structure for their installation. Many other devices to make things fit are employed. In masonry the mortar joints may be compressed or expanded and the courses sloped up or down to meet the given dimensions. Metal parts may be bent to make connections. Various finish parts may be sloped to meet dimensional discrepancies. These are but a few of the common practices that may be classified as methods of completing coordination in the field.

It is common knowledge that these field operations are wasteful and inefficient. Most of them could be done

M. W. Adams, *Modular Service Association, Boston, Mass., is secretary of the ASA Sectional Committee on Coordination of Building Materials and Equipment, A62.*

more efficiently by machines and under controlled conditions in a factory. Piles of rubbish at the job are common evidence of the waste involved. Cutting and fitting are a frequent cause of inferior appearance, as in masonry where the joint pattern is important. Many of the devices used for field coordination may be the cause of faulty construction. For example, it has been proved that cut bricks are more likely to cause leaky walls. The compression or expansion of mortar joints is also a common cause of trouble.

These methods have serious disadvantages for the architect, weakening his control of the job and making him dependent upon the skill and integrity of field mechanics. They are out of step with modern production by which other industries have reduced their costs and improved the value of their products.

In the past, the avoidance of field cutting and fitting has not often been practical. It required the predetermination of coordinated sizes and the manufacture of products in the sizes so determined. This involved additional work in the design of the building and it usually increased the cost of producing the materials and parts. It was frequently found that these extra charges exceeded the saving to be realized in building erection. It is obvious, therefore, that in order to avoid wasteful field cutting it is necessary to reduce these costs so that there will be over-all economy in making products in sizes that fit without alteration, and in correlating building plans with these sizes.

A majority of the materials and equipment used in buildings are produced in sizes fixed by the producing industries. Some products can be ordered in special sizes, usually at a considerable premium in price, while others can be obtained only as they are shown in the manufacturers' catalogs. The lack of a broad coordination between these established sizes has been a basic cause of waste and extra cost in field erection, and accounts for a considerable part of the demands for custom-made items. The standardization of building products has been a principal source of economy in manufacture. The coordination of these standards will extend the economy to the processes of building design and erection.

Thus a major objective of the A62 program is the adoption of coordinated sizes for all building products for which standardization is practicable and economical. This cannot be accomplished piecemeal, by providing for the combination of a few products. Useful, but isolated, examples of coordination have long been available, as for example, widths of wallboard, insulation, and medicine cabinets were adopted to fit the usual stud spacings. Lighting troffers 12 in. wide and 4 ft, 8 ft, etc. long are coordinated with the 12-in. square acoustical tile. Widths of wood window and door frames fit the conventional wall thicknesses. These examples of limited coordination have been of great value and have demonstrated the economy to be derived from a broad application of these principles.

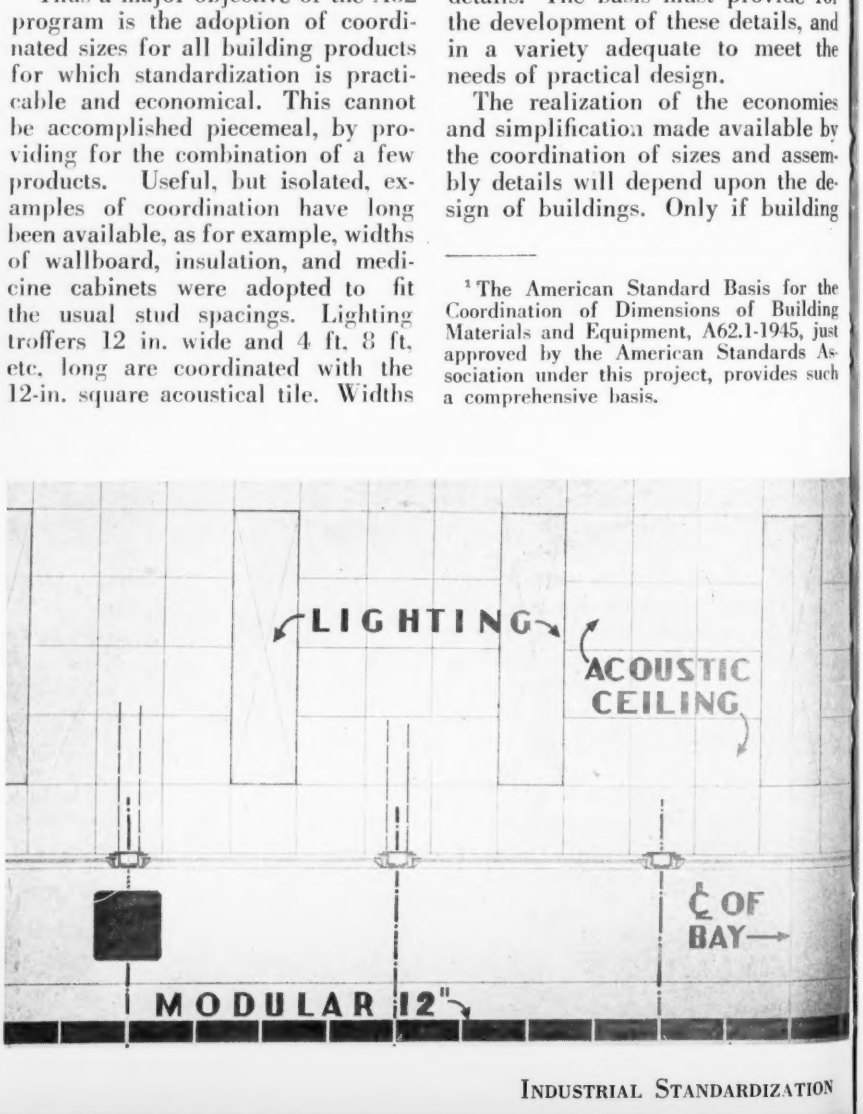
The accomplishment of the objective of coordinated sizes for all building products is an undertaking of great technical complexity. When the vast assortment of building products that are subject to size standardization and the many combinations in which they are used in building construction are considered, it becomes apparent that a broad comprehensive basis[1] for determining the correct sizes is essential. The basis must be uniformly applicable to all classes of products. It must provide useful and economical standardization without sacrificing practical flexibility in building design.

Since coordination is a relationship between sizes that permits their combination in the field, it is inevitably based on typical assembly details. The basis must provide for the development of these details, and in a variety adequate to meet the needs of practical design.

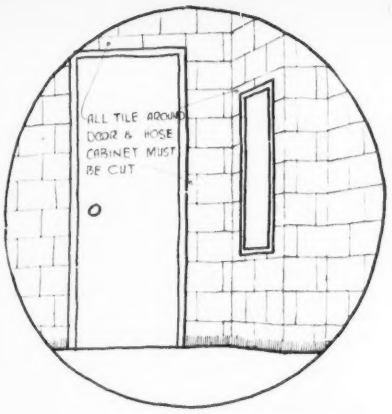
The realization of the economies and simplification made available by the coordination of sizes and assembly details will depend upon the design of buildings. Only if building

[1] The American Standard Basis for the Coordination of Dimensions of Building Materials and Equipment, A62.1-1945, just approved by the American Standards Association under this project, provides such a comprehensive basis.

Piles of rubbish at the job (such as the one above) are common evidence of the waste involved when dimensions are not coordinated.



Arbitrary building dimensions are here discarded. This drawing shows in plan the coordinated layout of partitions, columns, windows, 12-in. brick, acoustical tile, and troffers.



BEFORE . . . . AFTER

Cutting and fitting are a frequent cause of inferior appearance as shown in this sketch of a stairhall improvement in a New York public building.

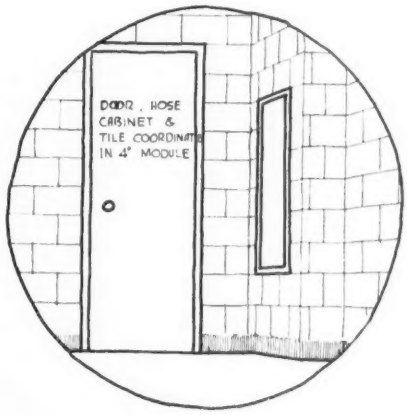
dimensions are correlated will the standard products apply with a minimum of field cutting. For this reason it is essential that the basis afford the architect simple methods for correlating dimensions and details with the sizes of materials.

In this respect the convenience of sizes for the architect is of great importance. When acoustical tile is used, it is simple to make interior dimensions 1 ft multiples, and the layout of columns, partitions, and lighting troffers is readily correlated by similar 1 ft dimensions. Arbitrary building dimensions are thus discarded in favor of the governing rhythm dictated by the sizes of available products. On the other hand, the former standard 8 in. brick length, plus a ½ in., ⅜ in., or ¼ in. mortar joint, created layout units that were not convenient. It is far from simple to lay out walls and openings in multiples of these units, and highly improbable that openings laid out in this way would fit the available windows and doors. The convenience of the architect does not necessarily demand even inch sizes for the products. It is rather a question of how parts are assembled or installed and the simplicity of the resulting building dimensions.

While convenient sizes will stimulate the use of standard products, typical buildings will always require some special parts and details. Even with the maximum extension of standardization, the countless variety of problems that arise in individual buildings could not be solved entirely by standard products. Thus, layout dimensions will have to be correlated with both standard and special parts and details, and the methods that are developed to simplify this process will have to apply to both.

There are three distinct stages in the development of coordination to be comprehended in the broad basis as outlined below:

It must enable producers to establish coordinated sizes for their products as standard.



This sketch shows how coordination eliminates the need for cutting.

It must enable assembly details to be developed to show how these products can be combined.

It must enable architects to lay out and design buildings with dimensions that are consistent with the products and assembly details.

The scope under which ASA Project A62 was authorized, recognized these requirements. It is as follows:

(*a*) The development of a BASIS for the COORDINATION of dimensions of building materials and equipment, and the CORRELATION of building plans and details with such dimensions.

(*b*) Recommendations of sizes and dimensions as STANDARDS suitable for dimensional correlations.

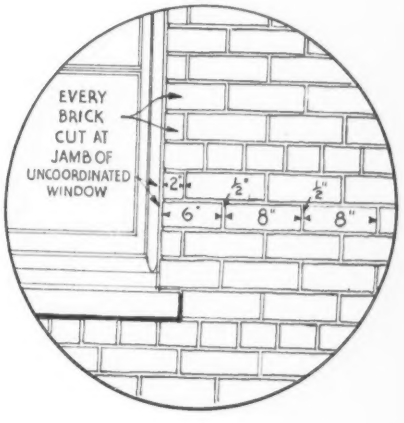
The project has now accomplished the assignment (*a*) of the scope. A Basis for the Coordination of Dimensions of Building Materials and Equipment has been approved as the American Standard Basis, A62.1-1945. It has been thoroughly tested during a year of trial use and found to meet all the requirements that have been discussed above.

The American Standard Basis, A62.1-1945, is supplemented by the American Standard Basis for the Coordination of Masonry, A62.2-1945. The coordination of masonry products is in itself an accomplishment of great significance and affords economy and simplification for producers, architects, and builders alike. Certain basic principles are established by this standard which apply to all masonry products.

Project A62 is proceeding with the development of standard sizes for particular products which will conform to the standard basis for coordination. The sizes recommended have already been announced by the industries making structural clay products, concrete masonry products, solid-section steel windows, and wood double-hung windows. Others are expected to follow in the near future.

The benefits and economies that will be derived from the adoption of this basis for coordination are many and varied. Producing industries, distributors, builders, and architects will participate, and the consumer will be the ultimate beneficiary. Following is a recapitulation of specific advantages.

The economies for the producing industries differ for each class of building product.



It has been proved that cut brick, as shown in this example from a typical existing building, is more likely to cause leaky walls.

Some industries will be able to eliminate duplicating and overlapping stock sizes.

Others may benefit by a nation-wide standardization which replaces local practices and customs, differing in various sections of the country.

A logical basis will be provided for settling many unsolved problems of standardization.

For many products better standardization will make possible improved manufacturing processes with better precision and uniformity of quality.

The greater convenience of standard sizes for the architect will stimulate their use in preference to custom-made items.

There are many products which have never been standardized because there has been no assured demand for particular sizes, as, for example, masonry sills. With the improved standardization of related products, e.g. windows and masonry, the adoption of standard sizes may become practicable, with consequent reduction in cost and improvement in quality.

New materials with valuable properties have been developed which cannot economically be field cut or made to order for the job, but would have a market if they could be made in standard sizes and used without field cutting.

The standardization of assembly details and methods will be helpful to manufacturers who are concerned with preventing faulty installation. It will be easier and cheaper for the applicator to make the installation in the approved manner.

The benefits for builders differ according to the type of construction.

For the mason the ordinary foot rule can replace the brick scale, and no story poles will be needed. All cutting and forcing of joints will be eliminated or definitely limited and controlled.

The builder will have clearer, more accurate and complete drawings and details to work with.

The cutting and fitting will be reduced and when required it can be organized for better efficiency.

In general, the building erection should be cleaner, more orderly, and efficient, and costs should be reduced.

The advantages which architects will derive from the use of the basis are many and varied.

A simplified method of making his building layout which will reduce drafting time.

The possibility of changing specifications and substituting alternate materials and constructions without redrawing his layout.

The elimination of the designing and the repetitive redrawing of structural assembly details.

The better availability of many building products through their improved standardization with a consequent simplification in specifications.

The replacing of special details by stock items, so that the designing and detailing for these items may be simplified.

Easier supervision of the job as a result of standard building practice.

The unity of design that results from the application of a single dimensional unit, both vertically and horizontally.

In the past with each producing industry developing the sizes for its products independently, order and consistency were impossible. The task imposed upon the architect of fitting his building layout and design to this motley assortment of sizes defied solution. The American Standard Basis for Coordination marks the beginning of the end of this chaos. It lays the foundation for economy, simplification, and better building.

Project A62 was organized by the American Standards Association in 1939 with the American Institute of Architects and Producers' Council, Inc, as joint sponsors. Secretarial and technical services for the project are furnished by the Modular Service Association of Boston. The technical committee consists of 57 members, 24 representing producers' groups, 26 representing general industry interests such as architects, engineers, and contractors, while 7 represent the consumer or the public, including governmental agencies.

The new American Standard Basis for the Coordination of Dimensions of Building Materials and Equipment, A62.1-1945, provides the basis for coordination through a module of four inches applied as an increment to the sizes and assembly of building parts and to the layout of buildings. Four inches was selected as the unit affording the maximum practical standardization and simplification, and most consistent with present standardization and building practice. Copies of this standard can be obtained from the American Standards Association at 25 cents.

The American Standard Basis for the Coordination of Masonry applies the basic principles to the sizes and dimensions of masonry products. Copies of this standard can be obtained from the American Standards Association at 25 cents.

ICC Adopts Vision Standards for Safety

The Interstate Commerce Commission recently revised upward its visual requirements for motor truck and bus operators to the standards of the American Medical Association, the Better Vision Institute reports in *Illuminating Engineering*.

A number of traffic experts disagree with the AMA standards contending that they are so high as to bar many automobile drivers from the highways, the magazine reports. The American Association of Motor Vehicle Administrators has, therefore, developed its own standards for automobile drivers which are considerably lower than those proposed by the AMA and which put stress on the individual's ability to read and understand highway signs, the article declares.

Charles M. Cogan Retires from NEMA

Charles M. Cogan has resigned after 15 years as manager of the Engineering Department and secretary of the Codes and Standards Committee of the National Electrical Manufacturers Association. Lester M. Price has been appointed manager of the Engineering Department, as well as of the Regulatory Legislation Department, and will also succeed Mr. Cogan in his work on standards. Before this appointment, Mr. Price was a Meter and Wiring Engineer in the Electrical Distribution Department of the Public Service Electric & Gas Company, Newark, N. J.

Mr. Cogan has retired to attend to personal affairs but his services will not be entirely lost to NEMA since a portion of his time will be available for special assignments.

As secretary of the NEMA Codes and Standards Committee, Mr. Cogan has had close contact with much of the work of the American Standards Association. He has also served as secretary to two committees of the American Standards Association, having been elected secretary of the committee on the Rotation, Connections and Terminal Markings for Electrical Power Apparatus Committee, C6, in 1938, and of the committee on Preferred Voltages—100 Volts and Under, C67, in 1940.

Interchange of Standards Promotes International Trade

By George S. Case

Vice president of ASA tells Mexican industrial leaders that American Standards Association is in continuous cooperative contact with Mexican Standards Department. American Standards are available to Mexican industry; Mexican standards to industry in the United States.

ADVANCES in industrial research are continually bringing countries as well as industries closer together. With the increasing interchange of products and of technical information we have found it necessary to set up standards to serve as a common ground of understanding between buyer and seller. These standards have smoothed the way for commerce as well as aiding in production. They are of no less importance in international than in national trade, for all buying and selling in which goods do not come under the actual eye of the buyer must necessarily be based upon some sort of standard, even though it is only a two-party understanding such as "Like the one I bought of you last time."

Maintain "Dynamic Stability"

Such standards, by facilitating the flow of products through industry and commerce, have helped to maintain what we engineers call *dynamic stability* in industrial processes—just as an automatic pilot keeps an airplane in flight so that it responds with nicety to the slightest touch on the controls yet rights itself instantly following any deviation from its course.

Mexico already has an excellent standardization program which is administered by Ing Ignacio Aguerrebere, director, and Ing Manuel Torres-Torija, subdirector of the Department of Standards of the Secretariat of National Economy, at the head of which is Ing Gustavo P. Serrano.

Like most countries, Mexico has tended to standardize the things that she buys. She has set up standards for such diversified products as textiles; iron and steel and other metal products; construction materials such as cement, lime, and brick; food products, including cotton seed oil and wheat flour; copper wire for electrical purposes; and chemical and pharmaceutical products.

It is easy to predict for the Mexican Standards Department a great future of usefulness. In some ways we find a parallel now in Mexico to what happened in the United States early in the century. Then manufacturers had to find some way of making their greatly enlarged plants produce satisfactory income on the enormous capital investment. The advantages of properly applied industrial standardization on a national scale became apparent and not only were cooperative efforts made along these lines by different units in the same industry, but also successful steps were taken in certain fields of standardization that favorably affected different industries. For example, standard screw thread sizes brought advantages not only to the manufacturers of screws but to most of the mechanical industries as well.

Then came World War I with its emphasis on production. The belief in the practical worth-while savings that well directed standardization could effect had reached a point by then where a group of technical societies took the initiative in forming an organization through which nationally accepted standards might be promulgated. In this way the American Standards Association came into being in 1918, known until 1928 as the American Engineering Standards Committee.

Today the ASA is a federation of 88 national trade associations, technical societies, and Federal Government departments, doing work in many fields. It is the authoritative channel through which industry participates in the important aspect of self-regulation represented by the setting up of broadly applicable industrial standards that are acceptable to all interests.

***George S. Case** is chairman of the Board of the Lamson & Sessions Company, and is vice president of the American Standards Association.*

This article is abstracted from an address given by Mr. Case before the Mexican-American Conference on Industrial Research at Chicago, October 5.

Use of Standards Lowers Costs

The organization has developed 831 standards. Of these, 98 are safety standards which have had a direct affect on stabilization of both production and employment in this country. The use of these standards has also lowered costs to the consumer, and here I am not excluding customers who may live south of our borders.

The wealth of experience found in the accomplishments represented by these many hundreds of standards is available to those in Mexico who may wish to make use of this information in writing specifications for their new industries or for the products purchased in the United States.

American Standards Practical Industrial Tool

As this conference aims to exchange fundamental and applied research, might I call your attention to these American Standards as a practical and constructive industrial tool that can perhaps be used in the industrial planning program of Mexico?

Our respective offices are in continuous cooperative contact. The American Standards Association is proud to keep in its library a complete up-to-date file of Mexican national standards for the use of industry in the United States.

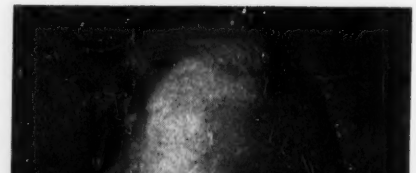
Lyman J. Briggs Retires as Director Of National Bureau of Standards

DR. Lyman J. Briggs, director of the National Bureau of Standards for the past 12 years, has retired after a continuous service of more than 49 years in the technical work of the Government. During these 12 years he has been a member of the Board of Directors of the American Standards Association.

It has just been revealed that Dr. Briggs was appointed by President Roosevelt in 1939 as chairman of the Uranium Committee to study the possibility of using atomic energy in warfare. While he was so closely identified with all the earlier work on atomic energy and personally directed much of the research, his connection with the undertaking was unknown to all but a very few of the Bureau staff.

Educated at Michigan State College and at Michigan and Johns Hopkins Universities, Dr. Briggs entered the Department of Agriculture in 1896. He organized the biophysical laboratory in the Bureau of Plant Industry in 1906. Among his many researches during this period was the development of the centrifugal method of classifying soils. It is based upon the percentage of water which the soil can hold against a force 1000 times that of gravity. In collaboration with Dr. H. L. Shantz, he published many papers on the influence of environmental factors on the water requirements of plants, including the development of a method of determining the "wilting coefficient" of soil, which gives a measure of the amount of water in soil available for plant growth.

Detailed to the National Bureau of Standards during the first World War, he joined the staff in 1920. In 1926 he became assistant director of the Bureau, and upon the death of his predecessor, Dr. George K. Burgess, he succeeded to the directorship in 1932. He received his appointment at the hands of both President Hoover and President Roosevelt.



Dr. Lyman J. Briggs

Among his scientific achievements at the National Bureau of Standards was the invention of an earth inductor compass in collaboration with Dr. Paul R. Heyl; and basic research in collaboration with Dr. Hugh L. Dryden on airfoils at very high speeds. This last research was carried up to the velocity of sound, and speed exceeding the velocity of sound. The result showed that the profile of airfoils should be changed as they are designed for higher and higher speeds, the thickest part being farther back the higher the speed. The result of this research has found extensive application in the design of blades of aircraft propellers.

Dr. Briggs also developed machines for floating specimens for metallic fatigue tests upon a layer of compressed air. Of a more popular nature was the development of methods of measuring the forces on an elastic ball when subjected to a blow. He applied these methods in measuring the forces to which a golf ball is subjected under the impact of the club head. Dr. Briggs headed the work on instruments for the two balloon flights into the stratosphere from the Black Hills in South Dakota in 1935. The last flight reached an altitude of 70,000 feet, the highest ascent which man has made.

During the depression, he directed the computation of an important series of mathematical tables which had not previously been available for research workers. Fifty-seven such tables have thus far been issued. The expense of the undertaking was at first born by the Works Projects Administration. Fortunately, the undertaking is being continued with the support of the Office of Research and Inventions of the Navy Department.

Dr. Briggs carried the heavy administrative responsibilities of directing the work of the Bureau through the difficult years of the depression and later through the hectic war years.

Dr. Briggs will now realize one of his long cherished desires of returning to laboratory work as guest worker in one of the Bureau's finely equipped laboratories.

Many honorary degrees and academic honors have been showered upon him including election as a Fellow of the National Academy of Sciences.

In ASA affairs Dr. Briggs has carried many important assignments. Fortunately, he has consented to continue service on the Committee on Certification and Labeling. He has been one of the most active and effective members of the ASA Board of Directors. In his dual capacity as Director of the Bureau and member of the ASA Board, he has filled an unique function in helping to correlate the standards activities of the ASA and those of the Government. In this way he has performed an invaluable service to industry and to Government.

—P. G. AGNEW

Australia Wants International Standardization

We in Australia are particularly anxious to see international standardization go forward, because we are in the position of being a battleground for the practices of other countries. We have a close link with the motherland—Great Britain; we also have an industrial link with the United States. On our markets we have products of both countries, with the result that we often find conflicts because of the lack of international standardization and agreement between the two countries. This makes us particularly interested in seeing an effective international standardization program put into effect.

—W. Rayner Hebblewhite, Director, Standards Association of Australia

Dr. Condon Is Named Director Of National Bureau of Standards

DR. EDWARD UHLER CONDON, one of the world's outstanding authorities in nuclear physics, has been appointed Director of the National Bureau of Standards, succeeding Dr. Lyman J. Briggs. Dr. Condon, who was also recently named Technical Advisor to the Special Senate Committee on Atomic Energy, took office November 5.

Dr. Condon was graduated from the University of California in 1924, receiving the Degree of Doctor of Philosophy in Physics two years later.

In 1928 he first achieved world-wide notice with the report of his work with Dr. R. W. Gurney, of the faculty of the University of Bristol, England, with whom he had developed the modern quantum theory of radio-activity, important for research in nuclear physics.

He had spent the previous year at Göttingen University in Germany as a National Research Fellow, specializing in theoretical physics and modern quantum mechanics. There he worked with Dr. James Franck, Nobel Prize winner, in developing the Franck-Condon principle of molecular spectra.

After a brief time in Munich, Dr. Condon returned to Columbia University to take over one of Dr. Michael Pupin's courses in theoretical physics, and in 1928 he became assistant professor of physics at Princeton University.

A year later he served a term as professor of experimental physics at the University of Minnesota, returning to Princeton in 1930, where he remained until his appointment as Associate Director of Research of the Westinghouse Electric & Manufacturing Company (now the Westinghouse Electric Company).

Dr. E. U. Condon

One of Dr. Condon's chief duties in the Westinghouse organization had to do with directing the work of Westinghouse research fellows in the field of pure science.

His scientific works include the *Franck-Condon Principle in Molecular Spectra, Quantum Mechanics*, written jointly with P. M. Morse, and *The Theory of Atomic Spectra* in collaboration with G. H. Shortley.

Alexander Forward Retires

The American Gas Association has announced the retirement, this month, of its managing director, Alexander Forward. After 22 years of service he has been succeeded by H. Carl Wolf, president of the Atlantic Gas Light Company.

Mr. Forward, who is retiring from active business, began his career as a newspaper man. He was secretary to the Governor of Virginia from 1914 to 1918. In 1918 he became director of relief supplies to the Balkan States for which service he was awarded the Order of the Crown of Rumania.

It was while serving on the Virginia State Corporation Commission in 1923 that Mr. Forward resigned to become managing director of the American Gas Association. Under his supervision the Association became the national organization for the development and coordination of the five billion dollar industry.

Starting in 1932 and up to his retirement, Mr. Forward acted as contact between the American Gas Association and the American Standards Association of which the AGA is an active Member-Body. The American Gas Association is sponsor for the important ASA project on gas-burning appliances.

ILO Issues Revised Statistics Year Book

The International Labor Office has recently published a revised edition (eighth of a series) of the *Year Book of Labor Statistics, 1943-44.*

The book contains the principal statistics of labor in sixty countries all over the world, including a chapter on industrial safety. It continues the use of the trilingual form with French, Spanish, and English.

In most cases, the figures in the Year Book have been taken from official publications or have been communicated by the Office of Governments. Generally the tables were submitted before publication to the statistical services of the different countries. Naturally, due to the war, the material from the belligerent or occupied countries is not as complete as in former years.

The book is obtainable in the United States and is distributed by the International Labor Office, Washington Branch, 734 Jackson Place, Washington 6, D. C. at $3.00.

Dr. Briggs to Speak at ASA Annual Meeting

Dr. Lyman J. Briggs, retiring director of the National Bureau of Standards, and chairman of the President's first committee on the atomic bomb, will speak on "The Impact of the War on Science" at the ASA Annual Meeting December 7.

British Standards Magazine Tells Why Bicycle Tires Fit

Getting a motor or bicycle tire that fits a wheel is a fairly simple matter in Britain today, as a result of standardization work in this field for the past 30 years, according to an article in the *Standards Review*, a periodical of the British Standards Institution.

The Society of Motor Manufacturers and Traders has published tire and wheel standards covering present-day requirements for bicycle, motorcycle, commercial vehicles, and private cars. These standards embrace not only the subject of sizes but, to secure the greatest economic life of the tire, each size and type of tire is associated with load and inflation pressures, the article states.

Insurance Booklet on Eye Protection Covers Industrial Lighting Standards

Both the government and industry have long recognized a need for the development of industrial lighting standards. To meet this need, in 1942, the American Standards Association approved the revised American Standard on Industrial Lighting, A11-1942, prepared under the sponsorship of the Illuminating Engineering Society.

In a booklet, *Methods of Testing and Protecting Eyesight in Industry*, published recently by the Metropolitan Life Insurance Company as part of their Industrial Health Series, some of the standards arrived at in this revised code as well as many other phases of eye protection in industry are discussed. "Certain standards of light intensity, lighting quality, and other lighting practices have been developed for the guidance of factory management, . . . which stipulate both minimum requirements and recommended desirable standards for specific industries," the booklet explains.

Since the determining of lighting standards must of necessity be influenced by the different factors involved, such as type of work, age of employee, color and reflection of the material being worked on, and its surroundings, the standard arrived at must be adjustable to the individual performance, the explanation continues.

"The range of intensities recommended for general lighting in industrial operations of various kinds is from 10 to 50 foot-candles, while for general office work the range is from 25 to 50 foot-candles. . . . For certain special tasks such as fine engraving, fine assembly, extra-fine inspection, watch repairing, proofreading, and sewing on dark materials up to 200 foot-candles may be desirable as an aid to vision."

About one-fourth of the states have adopted minimum requirements in industrial lighting. Only in some of these states are such standards actual laws. In most cases the lighting codes adopted ". . . are based on minimum standards evolved before the science of lighting had advanced to its present stage and when the cost of lighting was high," the booklet states.

In addition to its discussion of the industrial lighting standards, the booklet presents in detail the purpose and scope of industrial eye examinations; how to make eye tests and what equipment is needed; the functions of the eye and techniques for measuring them; special arrangements for protecting eyes in fine work processes; and various industrial lighting systems, including how to measure and test industrial lighting. Copies of *Methods of Testing and Protecting Eyesight in Industry* can be obtained upon request from the Metropolitan Life Insurance Company, 1 Madison Avenue, New York 10, N. Y.

Standardization Needed in Egg Market

A housewife buying eggs today can have very little confidence in the grade marking for the simple reason that we do not have one national law regulating such labeling. Today we have nearly as many laws as we have states, and it has resulted in disruption of trading and in confusion for the producer, handler, and consumer.

The extent of the confusion was indicated in a recent study by Mr. H. E. Botsford, who at the time was on leave from Cornell University and was working in the U. S. Department of Agriculture.

"Labeling requirements," said Mr. Botsford, "appear to have two conflicting purposes—the protection of buyers and the provision of local trade advantages."

Egg laws and regulations in 35 States provide for 1 to 4 retail egg grades, Mr. Botsford pointed out. Use of these egg grades is mostly on a voluntary basis although in 8 States labeling according to 4 grades is mandatory for all eggs sold at retail. In 7 states eggs which are labeled must conform to the quantity standards designated.

Other difficulties, according to Mr. Botsford's report, are caused by different regulations concerning weight classes, sizes, and what constitutes "fresh" and "storage" eggs. Where state laws do exist, there are rarely any enforcement agencies.

ASTM Plans Revisions Of Seven Standards

The American Society for Testing Materials has approved for publication the proposed revisions of the following ASTM specifications that have been approved as American Standards and for which the Society is proprietary sponsor:

Bone Black, Specifications for (ASTM D 210-41; ASA K36-1941)
Chrome Oxide, Specifications for (ASTM D 263-41; ASA K37-1941)
Lampblack, Specifications for (ASTM D 209-41; ASA K26-1941)
Methods of Chemical Analysis of White Pigments, (ASTM D 34-39; ASA K15-1939)
Methods of Laboratory Sampling and Analysis of Coal and Coke, (ASTM D 271-44; ASA K18.1-1944)
Prussian Blue, Specifications for (ASTM D 261-44; ASA K29-1941)
Titanium Dioxide Pigments, Specifications for (ASTM D 476-41; ASA K45-1941)

Grading and Labeling Activities Announced Recently

Uniform Terminology and Use of Definitions—Voluntary uniform labeling for entire industries has been approved by the Brand Names Research Foundation, the *Consumer News Digest*, published by the Committee on Consumer Relations in Advertising, Inc, announces. The policy of the Foundation will be to encourage among brand product manufacturers, as far as practical, definitions of product content or characteristics, and use of practical uniform terminology. This indicates the Foundation's endorsement of the "descriptive labeling" program begun this year by Grocery Manufacturers of America and of the work of the National Canners' Association for agreement among the canning industry on common meanings for terms on food product labels, the announcement declares.

A-B-C grade labeling—A-B-C grade labeling has been adopted by Safeway Stores for its canned goods, to be combined with descriptive labeling. Safeway, which is the country's second largest food chain, is following the lead of A&P, the largest, and several other chains. Safeway will use government grades only as far as it considers them a reliable buying guide, it is announced.

A Guide for the Designer in Deciding Upon Product Sizes

By John Gaillard

Offering no magic, preferred numbers may assist in establishing balanced and properly spaced items in a product line and obviate later difficulties when standardization may become necessary.

LAYOUT of a line of new products in a certain range of sizes raises the question into what steps this range shall be divided. The same problem exists when a "standard" series of sizes is to be selected from a variety of existing ones, a procedure sometimes called "simplification." Is there any guide that will help the designer or standardizer to determine what steps in size are most suitable in each individual case?

Considering this problem in general, we should realize that the term "size" applies to a wide diversity of characteristics. We may have to deal with a linear dimension, such as the diameter of a shaft; with an area, for example, that of the cooling surface of a steam condenser; or with a cubic content, such as that of an electric refrigerator. The term "size" may also concern a capacity or rating. Examples are the horsepower rating of an electric motor and the capacity of a pump to deliver a certain number of gallons of liquid per minute.

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The number of steps in a given size range must generally be a compromise between two opposite influences. Concentration on the manufacture of a few sizes keeps down cost of production—an advantage to the manufacturer and in final analysis, also to the user. Counteracting restriction of the number of sizes is the wish of the user of the product to have a reasonable freedom of choice. He does not want to have to buy a unit that is much too large or too small for his requirements. The manufacturer's problem may, therefore, be formulated as follows: What is the smallest number of sizes (within the range of sizes in which the product is to be made) that will give the customer a satisfactory variety of choice? To answer this question, each case will have to be considered on its own merits. For example, if a manufacturer plans to market a line of electric motors with horsepower ratings from 10 to 100, inclusive, what ratings shall he adopt between 10 and 100?

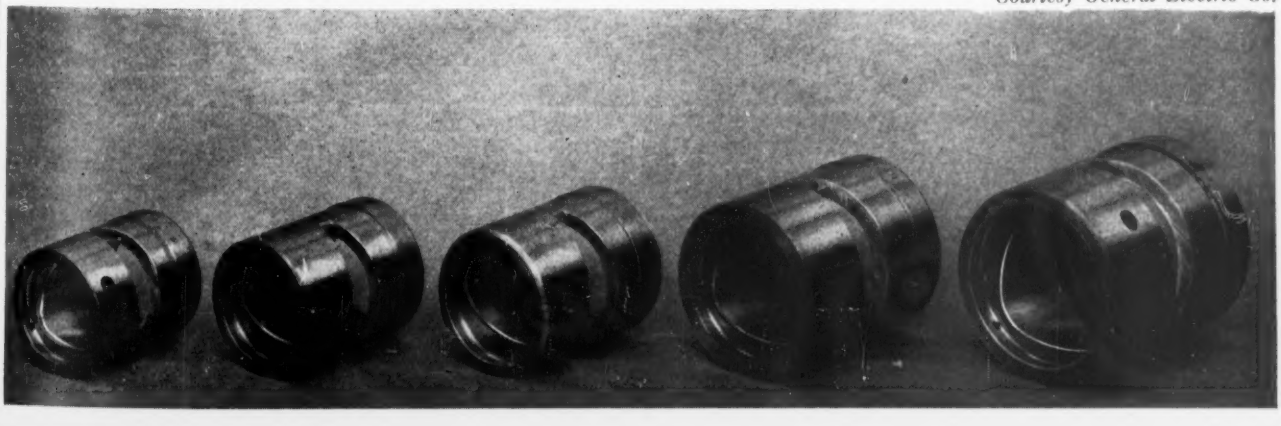
To assist the designer in answering this question, the American Standard, Preferred Numbers, Z17.1-1936, recommends that he consider the sizes given in Table 1. If the range of sizes in which he is interested does not lie between 10 and 100, the values in Table 1 are to be multiplied by 10, 100, etc, or by 0.1, 0.01, etc, to suit his case. Of course, the designer is free to begin and end the series of sizes he needs, with any preferred number. Thus, 34 thicknesses for sheet metal, ranging from 0.004 to 0.224 in. and strictly following the 20-series, are given in an American Standard entitled Preferred Thicknesses for Uncoated Thin Flat Metals (under 0.250 in.), B32.1-1941. They are recommended to be used, whenever possible, instead of the large variety of sheet metal thicknesses given in a number of un-coordinated gage systems.

***Dr. John Gaillard** is Mechanical Engineer of the American Standards Association.*

As the name, preferred numbers, indicates, the designer is merely asked to use these numbers *in preference* to any others—provided, of course, that he finds it possible to do so. The American Standard does not intend to restrict the designer to the exclusive use of preferred numbers. In fact, it recognizes that in some cases preferred numbers cannot be used. However, where their application is practicable, they yield tech-

Series of five sleeve-bearings designed on basis of Preferred Numbers. Load capacities belong to decimal 10-series (1600, 2000, 2500, 3150, and 4000 lb) and diameters to the 20-series of binary fractions (2½, 2¾, 3, 3½, and 4 in).

Courtesy General Electric Co.



nical and economic benefits which may be quite substantial. The use of preferred numbers is simple, but curiously enough, the subject seems to have become so much shrouded in mystery that many practical men regard preferred numbers as something academic, rather than as a guide to economic design. If this mystery can be dispelled, we may expect to see designers keeping a list of preferred numbers on their desks or drafting boards, along with their slide-rules—that is, as practical tools in their work.

Basic and Additional Series

The intention of the American Standard is that the designer first try to use values from the 5-series (see Table 1). This series has been obtained by establishing five steps between 10 and 100, all increasing in the same ratio. If this ratio is called a, its value follows from the equation, $10\ a^5 = 100$, or $a = \sqrt[5]{10} =$ approximately 1.5849. This would give us the following values for the 5-series: 10, 15.849, 25.119, 39.811, 63.096, and 100. For practical use, these "theoretical" values have been rounded to: 10, 16, 25, 40, 63, and 100, with a constant step-up of about 60 percent. If this is not fine enough for the designer's requirements, he should try the 10-series, with twice as many steps in the same range, and a step-up of about 25 percent. For still finer gradations in size, he can use the 20-series (step-up about 12 percent) and the 40-series (step-up about 6 percent). While the values of all series have been slightly rounded from the theoretical figures, the difference is in no case greater than 1.3 percent.

5-Series (60% Steps)	10-Series (25% Steps)	20-Series (12% Steps)	40-Series (6% Steps)
10	10	10	10
			10.6
		11.2	11.2
			11.8
	12.5	12.5	12.5
			13.2
		14	14
			15
16	16	16	16
			17
		18	18
			19
	20	20	20
			21.2
		22.4	22.4
			23.6
25	25	25	25
			26.5
		28	28
			30
	31.5	31.5	31.5
			33.5
		35.5	35.5
			37.5
40	40	40	40
			42.5
		45	45
			47.5
	50	50	50
			53
		56	56
			60
63	63	63	63
			67
		71	71
			75
	80	80	80
			85
		90	90
			95

Table 1.—Basic preferred numbers in the decimal series 10 to 100.

The four series in Table 1 are called the basic preferred numbers series. In exceptional cases, the designer may use the 80-series, with a step-up of about 3 percent. Still other step-ups may be obtained by skipping steps in a basic series. For example, by taking every other step in the 5-series (5/2-series), the step-up becomes about 150 percent, and by taking every third step in the 5-series (5/3-series), 300 percent. This ample choice of gradations in size, available to the designer through the basic and the additional series, permits him to use preferred numbers for a wide variety of problems.

The American Standard contains also tables giving preferred numbers in binary fractions up to 40, in the 5-, 10-, 20-, 40-, and 80-series. These numbers are recommended only for linear dimensions in inches where binary fractions are in common use, such as for diameters of steel bars, lengths of bolts, and so on.

Advantage of Constant Ratio

The question may arise why the designer should adopt values, say, from the 5-series, rather than some other values. For one thing, the numbers 16 and 63 may look less attractive to him than 15 and 60. Possibly, if he had to pick five steps between 10 and 100, he would come out with the ratings: 10, 20, 30, 50, 75, and 100 hp. If we call this the A-series, why is not this as good, or possibly better than the 5-series? The answer is that the A-series has step-ups that vary rather widely. For the 10/20 step, there is a 100 percent increase and for the 75/100 step, an increase of only 33 percent. Consequently, a customer who wants a motor with a rating of 15 horsepower (midway between 10 and 20 horsepower), has to take the 20 horsepower motor of the A-series which is 33 percent larger than the one he needs. Contrasting with this, the customer who wants a rating midway between 75 and 100 hp would have to take a 100 hp which is only 14 percent larger than required. Therefore, in regard to flexibility in choice of sizes, the A-series gives customers a different "deal" depending on the magnitude of the rating they want. This inequality does not exist in the 5-series, or any other preferred numbers series, since in each of these the percentage step-up is constant throughout its range.

Why the 5-, 10-, 20- and 40-Series?

It may be argued that progression in size, based on a constant ratio, may be obtained also with ratios other than those adopted for the preferred numbers series. The openings of an American Standard series of wirecloths for testing sieves, Sieves for Testing Purposes (ASTM E11-39; ASA Z23.1-1939), step up in the ratio $\sqrt[4]{2}$ (about 1.9), and the ratio between consecutive wire diameters in the Brown and Sharpe gage system is about 1.123. How then, did the 5-series and its related finer gradations originate? They were devised by Colonel Charles Renard who in the 1870's was placed in charge of the aeronautical section of the French army. He found that no less than 425 different sizes of cables for mooring captive balloons had been adopted. Looking for a logical approach to the problem of reducing such excessive variety, Colonel Renard hit upon what we now call preferred numbers, as a general solution. He adopted 5, 10, 20, and 40 steps between 10 and 100, 100 and 1,000, etc, because multiples and sub-multiples of 10 are the "milestones" of the decimal system. Applying his invention to balloon cable sizes, he reduced their number to 17. In his honor, the French still call preferred numbers, the "Renard series."

For many years, industry paid no attention to preferred numbers. During the decade after the first World War, when national standardizing bodies were founded in more than

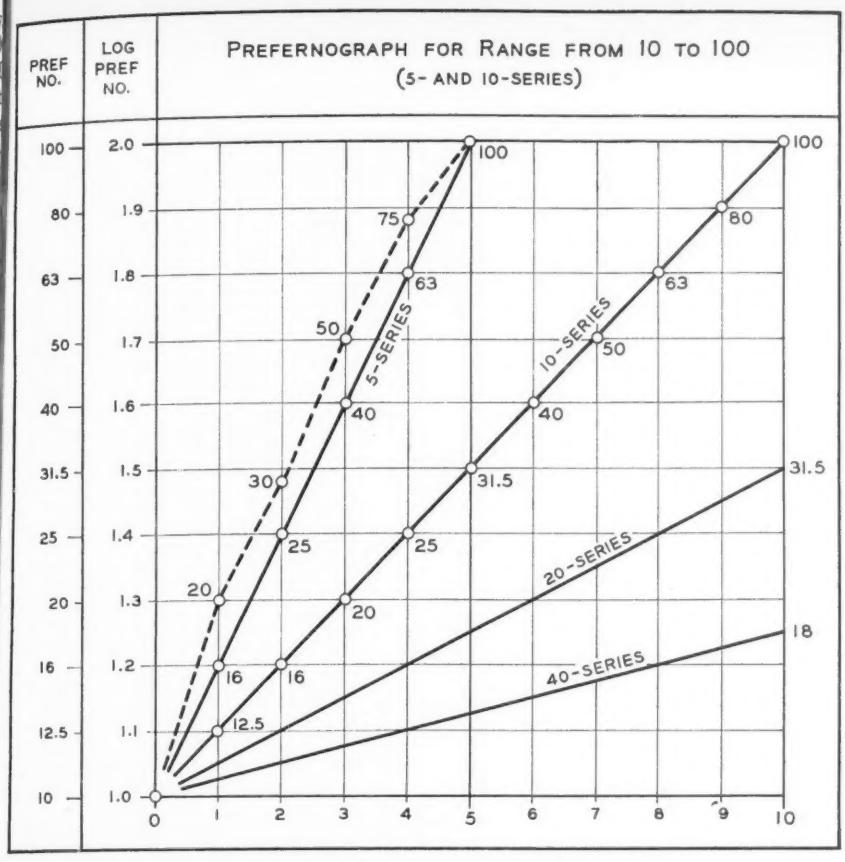


Fig. 1.—The prefernograph and its use for comparing existing series of sizes with preferred number series.

20 countries, the selection of series of standard sizes from an existing variety became a frequent problem. It was then that preferred numbers drew the attention of standardizers as a valuable guide in their work and several countries adopted the series as a national standard. In 1935, the International Standards Association (ISA) recommended the four series given in Table 1, for international adoption. They have been formally approved as a national standard in 16 countries, as follows: Czechoslovakia, Denmark, Finland, France, Germany, Holland, Hungary, Italy, Japan, Poland, Roumania, Russia, Spain, Switzerland, Sweden, and United States.

The application of preferred numbers is independent of whether the designer works to the inch system or the metric system. It so happens that 25.4, the standard conversion ratio between the inch and the millimeter, now internationally adopted for industrial use (American Standard Practice for Inch-Millimeter Conversion for Industrial Use, B48.1-1933 and British Standard Conversion Factors and Tables, No. 350-1944), differs by only 1.6 percent from 25, a preferred number. Therefore, when inch values in preferred numbers are converted to rounded millimeter values, the resulting sizes will differ from preferred numbers by only about 1.6 percent.

Incidentally, the value of π (approximately 3.141) is also close to a preferred number (3.15). Therefore, if the diameter of a circle is a preferred number, its circumference and its area also are close to preferred numbers. This is an advantage where a designer is dealing with pulleys, pipes, cylindrical shells of boilers or tanks, etc.

Practical Applications

That there is nothing academic about preferred numbers is shown by the fact that two large electrical manufacturers have applied them widely to purchase specifications for stock materials and parts, and to the design of components and complete units of products, as illustrated by the following examples: Steel bars (hot-rolled or cold-finished); spring steel strip; free-machining brass rod; sheet metal thicknesses (American Standard B32.1-1939); thicknesses of micarta plates and dimensions of micarta bars, angles, and channels; dimensions of shaft collars, spacers, parallel keys, bolts, studs, cap screws, machine screws, headless set-screws, steel and brass galvanized washers; and by the following examples among components and complete units: diameters of railway motor shafts; coil spool insulation washers; armature bores; commutator diameters; carbon brushes; punchings for alternating-current rotating apparatus; mounting dimensions for electric motors (NEMA standard); gear ratios for gear motors; ampere ratings for grid glow tubes; kinetic energy (in horsepower-seconds) of flywheels; dimensions of transformer tanks; and cubic contents of oil tanks and similar reservoirs.

The five sleeve-bearings shown on page 247 of this article demonstrate the fact that preferred numbers, in addition to giving a step-up in size that is technically sound, also produce a very harmonious appearance of a line of products as a whole. This may be important with a view to the customer's acceptance of the product. In this illustration, load capacities belong to the decimal 10-series (1600, 2000, 2500, 3150, and 4000 lb) and the diameters to the 20-series of binary fractions (2½, 2¾, 3, 3½, and 4 in.).

Basis for Future Standardization

If, in the early stage of an industry, all those developing the new product adopt preferred numbers for its essential characteristics, a common basis is laid for future standardization of the product. The need for such standardization will arise as the product becomes more widely used and can be met only after the frequent changes in design marking the development phase have made place for a certain stabilization in design. Skilful use of preferred numbers will not hamper either the rapid changes during the development period, or changes in details that will still be made when the product has reached a generally rounded-out form.

The creation, by the use of preferred numbers, of a basis for future standardization may be illustrated by reference to the A-series of motor ratings (10, 20, 30, 50, 75, and 100 horsepower). Another motor manufacturer may adopt a different series, such as: 10, 15, 25, 35, 60, and 100 horsepower (B-series). Under the in-

fluence of competition, both manufacturers will probably end up by making motors with all of the ratings appearing in the combined A- and B-series. If five steps between 10 and 100 horsepower are sufficient, this condition means wasteful variety. Furthermore, if the question of a standard series of ratings arises, each manufacturer will naturally advocate the adoption of his own series and a compromise may be difficult to reach. Both drawbacks are avoided if A and B, in laying out their motor ratings, adopt the 5-series, something they will do automatically and independent of each other, if they work to American Standard preferred numbers as a matter of principle.

The selection of a standard series of sizes from existing variety would often be different if investment in current practice did not require a compromise with engineering judgment. The remark may then be heard how fortunate it would be if those responsible for the early development of the product had been able to visualize the future needs for standardization. On the other hand, it is also recognized that premature standardization of details will unduly "freeze" design and thus hamper technical progress. Here is where skilful use of preferred numbers permits the designer to strike the right balance between what should be standardized and what should be left to individual judgment. Now that preferred numbers are recognized as a valuable tool for the designer, we may expect more and more industries to apply them to the design of their products as soon as these emerge from the experimental stage. An example is the series of ampere ratings of grid glow tubes, which were adopted on a preferred number basis when the art was new. They were selected from the 5-series: 0.10, 0.63, 2.5, 4.0, 10.0, and 25.0 amperes.

Use of Prefernographs

The application of preferred numbers can be greatly simplified by using a graph representing the various series in a given range. Such a preferred numbers graph, or briefly "prefernograph," is based on the fact that since the theoretical values of a preferred numbers series step up in a constant ratio, their logarithms step up by a constant value. For example, the common logarithms of the theoretical values of the 5-series, range 10 to 100, are 1.0 to 2.0, stepping up by 0.2. In Fig. 2, points

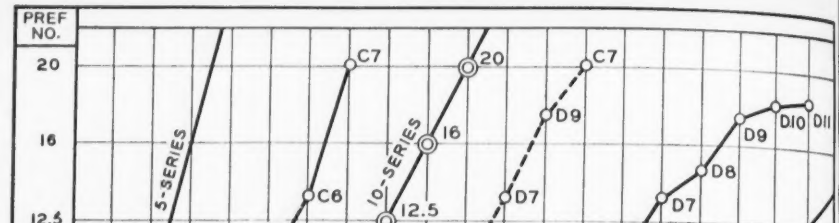


Fig. 2.—Prefernograph for comparing C- and D-series of cubic content ratings of electric refrigerators and for their possible unification.

are plotted at equal distances along the horizontal axis, representing successive steps in the preferred numbers series from 10 to 100. On the vertical axis, the logarithms of the numbers of the 5- and 10-series have been plotted. If now, the six points, 0 to 5, inclusive, correspond to the numbers of the 5-series, and their respective logarithms are plotted as ordinates, the points thus obtained lie on a straight line. In a similar way, the line for the 10-series can be drawn (see Fig 1). The lines for the 20- and 40-series can be shown in Fig. 1 only for the ranges from 10 to 31.5, and from 10 to 18, respectively. Characteristic for a prefernograph is that the steepness of each line representing a preferred numbers series is a measure for its step-up. Thus, the 5-series (60 percent step-up) is steeper than the 10-series (25 percent step-up).

The prefernograph can easily be adapted to the range of sizes in which the designer is interested. If such graphs are used regularly, it is advantageous to make preprints. A prefernograph form, giving the four basic series in the range from 1 to 100, and 40 steps on the horizontal scale, can be printed on a sheet of paper, 8½ by 11 in., and may serve different purposes.

For comparison with preferred numbers, the A-series of motor ratings has been plotted in Fig. 1 (dotted line). This shows at a glance that the A-series deviates from the 5-series and, also, how each step of the A-series compares with the constant step-up of 60 percent of the 5-series. This facility of presenting an immediate and clear picture of an existing series of sizes against a background of preferred numbers lines makes the prefernograph a handy tool, not only for analyzing a series of sizes but also for deciding on what basis two or more series could be unified, either by replacing them by a preferred numbers series, or by a selection from the existing sizes. This is illustrated by the following example from industrial practice.

Unification of Series

Two manufacturers of electric refrigerators, designated here as C and D, adopted some years ago different series of cubic content ratings covering about the same range, from 4 to 20 cubic feet. The C-series contained seven ratings and the D-series, eleven, as follows:

Series C:	C1	C2	C3	C4	C5	C6	C7
Ratings:	4.2	6	7.2	9	11	13.5	20.1 cu ft
Series D:	D1	D2	D3	D4	D5		
Ratings:	4.4	6.3	6.7	9	10.9	cu ft	
Series D:	D6	D7	D8	D9	D10	D11	
Ratings:	11.3	13.6	14.8	17.2	18	18.3 cu ft	

Both series are plotted against the 5-, 10-, and 20-series in the prefernograph, Fig. 1. (This graph was originally made for the range from 1 to 100, but to save space, only the portion required for the range considered in this example is shown in Fig. 2.)

The C-series is rather regular,

as may be noted from the solid line, C1 to C7. From C2 to C6, the line runs almost parallel with the 10-series, which means that in this subrange the C-series has a step-up of about 25 percent. Less harmonious are the large steps at the ends of the C-series. The character of the series as a whole is closest to that of the 10-series.

The D-series is quite irregular, as shown by the solid line, D1 to D11. This contains large step-ups, as well as very small ones. Two of the latter are at the large end of the series (D9, D10, and D11), contrasting strongly with the large step-up at the small end of the series (D1-D2). In some places, the D-series is almost as steep as the 5-series and in others, less steep than the 20-series.

Let us assume that the two manufacturers tried to reach agreement on a common "standard" series of ratings. If they intended to re-design their lines, and neither objected to a change in the existing ratings, the eight values of the 10-series, 4 to 20 cubic feet, might be satisfactory to both of them. However, if re-design were out of the question and only a "simplification" of series C and D could be considered, the sizes indicated by the dotted line, Fig. 2, might be adopted. The ratings concerned and their step-ups are as follows:

Simplified series:	C1	C2	C3	C4(D4)	D5	D7	D9	C7
Ratings (cu ft):	4.2	6	7.2	9	10.9	13.6	17.2	20.1
Step-up (per cent):	43	20	25	21	25	26	17	

The step-ups of this series come rather close to the 25 percent step-up of the 10-series, except at the ends. The original large step C6-C7 (see solid line C1 to C7 Fig. 2) has been subdivided by D9, but the step C1-C2 at the small end (43 percent) could be split only by the addition of a new rating. However, as a whole, the simplified series would be an improvement over the C- and D-series.

The prefernograph, Fig. 2, also shows that if the two manufacturers had originally laid out their ratings on the basis of preferred numbers, they could have adopted, to begin with, the eight ratings of the 10-series, from 4 to 20 cubic feet. If later on, the need of a finer step-up had arisen (the small steps in the D-series may be an indication that there is such a need), this could have been met by the adoption of values from the 20-series, between those of the 10-series, where required. For example, if the manufacturers had decided (independently) that the market called for a rating between 12.5 and 16 cubic feet (10-series), both would have chosen the value 14 (20-series), thus remaining automatically on a uniform basis with a view to a possible general standardization of ratings in the future. As series C and D have developed in practice, the former contains a rating of 13.5, and the latter, a rating of 14.8 cu. ft.

Use Is Growing

During the nine years that the American Standard on preferred numbers has been in existence, its use has grown continuously. In the postwar period, the rate of this growth will probably increase. Economy in production will become important again—particularly under the influence of competition—in many cases where the war effort had temporarily eclipsed this factor. The indications are that our increased commercial relations with foreign countries will involve a higher degree of international unification of industrial standards than we have ever seen. Preferred numbers will be a commonly used tool in solving problems arising in this field. Their applicability to a wide range of products, from the most elementary machine components to comprehensive industrial units, make it worth while for those in charge of layout and design to give preferred numbers due consideration. It may be stated here again: There is nothing mysterious about preferred numbers, nor is it difficult to use them. A copy of the American Standard and a brief study of the system is all that is necessary to put preferred numbers to work.

Six New Members Join ASA

The American Standards Association welcomes the addition to its organization of one new Member-Body, three Company Members, and two Individual Members. They are:

Member-Body

Scientific Apparatus Makers of America, Chicago, Illinois

Company Members

DeMornay-Rudd Inc, New York, New York
Gulf States Utilities Co, Beaumont, Texas
The Wilcolator Co, Elizabeth, New Jersey

Individual Members

K. W. Holmes, Chicago, Illinois
Joseph F. Phohl, Salem, North Carolina

Error in Conversions

In Standard On Chemical-Resistant Gloves

It has been called to our attention that there are three errors in the American War Standard on Chemical-Resistant Gloves, L18.29-1945, in the conversions from centigrade to Fahrenheit.

In section 6.1.2, Aging, the temperature should be:

$$70 \pm 1\ C\ (158 \pm 1.8\ F)$$

In section 7.1.1, Class A, Type I, Acid-Resistant Gloves, the temperature should be:

$$23.9 \pm 2.8\ C\ (75 \pm 5F)$$

In section 7.3.1, the temperature should be:

$$23.9 \pm 2.8\ C\ (75 \pm 5\ F)$$

SAE Handbook Presents 1945 Automotive Standards

The SAE Handbook, 1945 edition, now being distributed, presents new SAE standards on electrical equipment and non-metallic materials. and revised SAE standards on gasoline engines, iron and steel, lighting, nonferrous metals, and parts and fittings.

The new standards cover starting motor and generator curves, generator and starter mountings, starter pinion and ring gears, and windshield wiper hose. Revised standards include methods of determining steel hardenability, steel hardness conversion numbers, automotive gray iron castings, NE steels, automobile wiring, insulated cable, and license plate lamps.

The 620 pages of text contain all SAE official current standards and recommended practices, except those which are aeronautical, plus general data having important bearing upon both standards and recommended practices. The new volume supersedes all earlier editions.

Titles and prices of 56 approved American Standards of interest to the automotive industry are listed, and an extract from American Standard Rules for Rounding Off Numerical Values, Z25.1-1940, is included.

To the extent of a limited supply, the *Handbook* will be made available to non-members of the Society at $5.00 per copy. Orders may be placed with the Society of Automotive Engineers, 29 West 39th Street, New York 18, N. Y.

New Federal Specifications Board Drafts Government Buying Standards

Technical committees which prepare standards represent Government agencies responsible for quality and performance of materials and equipment

THE FEDERAL Specifications Board, composed of representatives from ten Government agencies, has drafted regulations governing the operations of the 74 technical committees under its supervision.

The Board, which meets regularly on the first Tuesday of every month, was established by Clifton E. Mack, Director of the Treasury's Procurement Division, and held its first meeting September 11. In cooperation with the Standards Branch of the Procurement Division, it is responsible for the preparation and revision of Federal Specifications for supplies used by Federal Agencies.

Promulgated by Director of Procurement

Federal Specifications are drafted by the technical committees of the Board for promulgation by the Director of Procurement. Each committee is composed of technical Government personnel and is responsible for drafting specifications on specific commodities. For example, committees handle specifications on the following products: appliances; ball and roller bearings; brushes and brooms; cordage; electrical supplies; paper and paper products; safety equipment; thermometers; wearing apparel; and on many other supplies and equipment used by Government departments.

Serving on these technical committees on a part-time basis are about 1300 experts from the Government service. According to regulations drafted by the Federal Specifications Board, the technical committees are composed of representatives from Government agencies responsible for quality and performance of materials and equipment. Drafts of proposed specifications will be submitted for comment and criticism to Government agencies, representative manufacturers, and recognized technical and professional societies. Among the latter listed by the Board are the American Standards Association, the American Society for Testing Materials, the Society of Automotive Engineers, the American Society of Civil Engineers, the American Society of Mechanical Engineers, the National Institute of Governmental Purchasing, and others. In this way, all interested parties will be given the opportunity to comment on any proposed specification. The technical committees will then incorporate any accepted suggestions in the final draft of a specification.

Initiation or revision of a Federal Specification may be recommended by any member of the Board or the technical committees, any Government agency, or by industry. The vice-chairman of the Board will then determine, with the advice of Board members, whether the facts justify the preparation of a specification.

Federal Specifications are used by Government purchasing officers to describe their requirements to suppliers and, through standardization of these requirements, to effect large savings to the Federal Government. They are widely used, too, by state, county, municipal, institutional, and educational bodies.

The chairman of the Board has not yet been appointed. Willis S. MacLeod, standards consultant to the Director of Procurement, will be the executive vice-chairman of the Federal Specifications Board; and Norman F. Harriman, technical assistant to the Director of Procurement, will be technical consultant.

Members of the Board From Many Government Divisions

Other members, designated by the heads of their agencies, are:

Colonel B. L. Neis, Chief of the Specifications and Inspection Branch, Production Division, Army Service Forces

Leo H. Vullings, Assistant Superintendent of the Division of Supplies, Bureau of the Fourth Assistant Postmaster

Captain W. C. Latrobe, Chairman of the Navy Department Specifications Board

Commander R. L. DeGroff, Chief of the Specifications Division, Navy Department

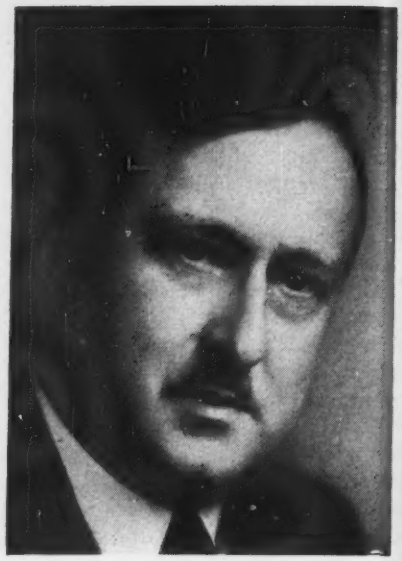
Earl E. Eisenhart, Purchasing Officer, Interior Department

J. M. Locknane, Acting Chief of the Division of Purchase, Sales and Traffic, Agriculture Department

A. J. Harrison, Chief of the Procurement Division, Supply Service, Veterans Administration

Taylor H. McCauley, Director of Service Operations, Federal Security Agency

Garland F. Rounds, Director of the Engineering Division, Bureau of Community Facilities, Federal Works Agency.



W. W. Woodbridge, Secretary

ASA Welcomes New Associate Member

The American Standards Association is pleased to announce that the Red Cedar Shingle Bureau has become its newest associate member.

Standardization is not a new field to the Red Cedar Shingle Bureau. The company has been an active proponent of standardization in the shingle industry for 30 years, chiefly for the purpose of establishing grading standards for red cedar shingles. The label "Certigrade" on a bundle of shingles is a guarantee of quality by the Bureau. The Bureau's program provides that any member-mill failing, upon inspection, to live up to this guarantee loses the right to use the "Certigrade" labels until such time as its products meet all requirements again.

The membership of the Bureau comprises some 95 percent of the manufacturers of red cedar shingles. Previous to the organization of the Bureau each manufacturer had set up his own grading rules, thus creating such multiplicity and confusion that an appeal was made to the National Bureau of Standards in 1930. It resulted in the establishment of a Commercial Standard for No. 1 Wood Shingles (CS 31-38) by the NBS. Grades were never set up for No. 2 and No. 3 shingles because the rules were regarded as too rigid by some manufacturers, but the Red Cedar Shingle Bureau has maintained these gradings of its own accord.

Officers of the Red Cedar Shingle Bureau are: Ray A. Wilde, Pacific

Timber Company, president; Charles Plant, Broedel, Stewart, and Welch, vice president; Jess Swarz, Crescent Shingle Company, second vice president; W. W. Woodbridge, secretary; and G. A. Brewer, treasurer.

Cement Association Becomes Member-Body of ASA

The American Standards Association takes pleasure in welcoming the Oxychloride Cement Association as a new Member-Body.

This association is a non-profit organization which is giving service to its members by helping to standardize performance tests and application specifications for the benefit of users of oxychloride cements.

Although the Oxychloride Cement Association has been in existence only two years, it has already made progress in carrying out its primary purposes which are, according to the association:

"To provide an impartial, coordinating body as a practical means of aiding Governmental agencies, industry, architects, engineers, and contractors, to obtain best possible results in the use of oxychloride cement;

To act as a clearing house in the formulation of performance tests and standard specifications of oxychloride cements;

To disseminate presently available knowledge of various types of oxychloride cement mixtures in diverse applications and to correlate data on new uses and methods of application; and,

To promote the greater use and better application of magnesium oxychloride cements wherever their inherent characteristics benefit the ultimate user."

Mr. C. Huddleston Bear, secretary of the Oxychloride Cement Association, will also act as contact with the American Standards Association.

Members of the Board of Governors of the Association are:

L. Neuberg, Westvaco Chlorine Products Company
A. R. Dixon, Westvaco Chlorine Products Company
J. A. Panter, Dow Chemical Company
Leroy C. Stewart, Dow Chemical Company
F. E. Schundler, F. E. Schundler & Company
D. P. Falconer, F. E. Schundler & Company

Standards Council Votes Cooperation On International Standards Projects

Council also recommends that ASA correlating committees end war work as soon as possible and incorporate war standards into peacetime projects.

COOPERATION with other countries to reach international agreements on standards and recommendations for incorporating the wartime work into the peacetime program, were the principal topics discussed by the Standards Council at its meeting September 27.

The Council voted that the American Standards Association should take part in an international project for the unification of national standards on wire and sheet metal gages; on terms and definitions used in steel heat treatment; and for unification of standard voltages above 200,000 volts. The work on these projects will go forward through the United Nations Standards Coordinating Committee.

The international project on wire and sheet metal gages had been requested by the Standards Association of Australia, which had submitted a revision of the British Standard specification for discussion. This recommendation was submitted to the American Society of Mechanical Engineers and the Society of Automotive Engineers, joint sponsors of the project on Wire and Sheet Metal Gages, B32. The ASME and SAE both recommended that ASA take part in the work.

The unification of terms and definitions used in steel heat treatment had been recommended by the British Standards Institution. Before coming to a decision, the American Standards Association referred the recommendation to the American Society for Testing Materials, which in turn consulted the Joint Committee on Definitions of Terms Relating to Heat Treatment under whose auspices the American terms and definitions had been developed. As a result, the American Society for Testing Materials recommended that the ASA participate. The Standards Council also approved the recommendation that the ASTM be invited to serve as sponsor of a sectional committee through which the national aspects of the work can be cleared.

The decision to take part in the proposed international project to bring about uniformity of standard voltages above 200,000 volts was recommended to the Standards Council by the U. S. National Committee of the International Electrotechnical Commission and the Joint EEI-NEMA Committee on Preferred Voltage Ratings. The project was requested by the French Committee of the International Electrotechnical Commission, and will be undertaken by the United Nations Standards Coordinating Committee.

A new ASA project on Refrigeration Nomenclature was authorized, to provide terms and definitions relating to principles, processes, and equipment for the refrigeration industry. The project will include graphical symbols in cases where they have not been provided in other graphical symbols standards. The American Society of Refrigerating Engineers will be sponsor.

In order to wind up the work on war projects, the Standards Council voted to recommend to the correlating committees that no new war projects be undertaken under the war procedure if such projects are requested by industry. New projects which may be requested by the government should be carefully examined to insure that they can be completed within a short time.

The Council is also recommending that correlating committees complete their investigations of the American War Standards in their respective fields in order that action can be taken to remove them from the books or have them approved as American Standards in their present form or in a revised form "after being suitably processed". In cases where war standards have been developed by war committees under scopes also assigned to sectional committees, the Standards Council recommends that sponsors of the sectional committee projects be urged to take early steps to merge the personnel of the war and sectional committees. This will enable sectional committees to take advantage of the knowledge and experience of the members of war committees in their consideration of war standards as the basis of American Standards.

New Members on Standards Council

N.F.S. Russell, of the United States Pipe and Foundry Company of Burlington, New Jersey, has been appointed a member of the Standards Council of the American Standards Association, representing the Cast Iron Pipe Research Association. He succeeds Leonard Peckitt who has retired.

Mr. Russell has served as an alternate on Standards Council since 1930 and was appointed a member of the Council in October 1945. He is also vice-chairman of Sectional Committee A21 on which he has served as a member since 1926.

L. R. Dohm, Warren Foundry and Pipe Corporation of New York City, has been named alternate representative for the Cast Iron Pipe Research Association.

F. L. Scovill, Jr. is the newly designated alternate to T. E. Veltfort on the Standards Council of the American Standards Association representing the Copper & Brass Research Association. He replaces J. S. McClenahan who is no longer associated with the company. Mr. Scovill was recently appointed a representative on the ASA Sectional Committee on Minimum Requirements for Plumbing and Standardization of Plumbing Equipment, A40.

New Standards from Other Countries Now Available in ASA Library

THE following new and revised standards, received recently by the American Standards Association from other countries, may be borrowed by ASA Members from the ASA Library or purchased through the Sales Department.

Australia

Wiring Rules, SAA CC.1-1940 Amendment No. 3 1944 25¢

Drafts of Proposed War Emergency Standards

Milking-Machine Parts, Misc Pub MP 11-1945 40¢

Canada

Canadian Electrical Code Part II, Construction and Test of Suppressors for Radio Interference, 2nd Edition, CSA C22.2-No. 8-1945 50¢

Great Britain

New British Standards

Battery-operated Electric Fences BS1222: 1945 75¢
Drawing Boards and Tee Squares BS1268-68:1945 75¢
Electroplated Coatings of Nickel and Chromium on Steel and Brass BS1224: 1945 75¢
Fireclay Wash Tubs and Tub and Sink Sets (Dimensions and Workmanship) BS1229:1945 75¢
Gypsum Plasterboard BS1230:1945 75¢
Jute-Insulated Cables for Electricity Supply at Voltages Not Exceeding 660 Volts BS1216:1945 75¢
Malleable Cast Iron and Cast Copper Alloy Pipe Fittings for Steam, Water, and Gas (Screwed B.S.P. Taper Male Thread and Parallel Female Thread) BS1256:1945 $1.25
Metal Sinks BS1224:1945 75¢
Metal Wall Ties BS1243:1945 75¢
Natural Stone for Building (Dimensions and Workmanship Only) BS1232:1945 75¢
Preservation and Packaging for Tropical Theatres of War. Recommendations for (Supplement No. 2) BS1133:1945 $1.85
Proof Corrections, Printers' and Authors' BS1219:1945 75¢
Tarmacadam and Tar Carpets—Granite, Limestone, or Slag Aggregate BS802: 1945 75¢
Tarmacadam and Tar Carpets—Gravel Aggregate BS1241:1945 75¢
Tarmacadam "Tarpaving" for Footpaths, Playgrounds, etc BS1242:1945 75¢
Three-inch Seamless Necks for Drums BS1223:1945 75¢

Drafts of Proposed British Standards

Acid Resisting Silicon Iron Pipes and Pipe Specials CH(CH)1606 (Third Draft)
Architects, Engineers, and Surveyors' Boxwood Scales, Specification for CH (ME)1663
Batch Type Concrete Mixers, Specification for CH (RD) 1275 (Revised Draft)
Cast Iron Bath Traps, Specification for CH (HIB) 1731
Fire Check Flush Doors (30 Minute Type) CH (TIB) 1907
Free-Standing Domestic Electric Wash Boiler CH (EL) 1379
Gas Lighting Units for Single Family Dwellings CH (GS) 2013
Living Room and Bedroom Storage Fitments CH (B) 1660
Street Lighting, Specification for CH (ELG) 1524 (Re-draft)
Synthetic Resin Bonded-Paper Sheet for Use in the Building Industry, Specification for CH (PLC) 1742
Terms and Sizes of Personal Stationary, Specification for CH (PRM) 1080

Drafts of Proposed British Standards for Comment

Cement Finishes CP (B) 484 1945 75¢ (2nd Proof)
Flues for Gas Appliances CP (B) 480 75¢ (3rd Proof)
Foundations and Sub-Structure CP (B) 491 1945 75¢ (3rd Proof)
Gas Lighting—Single Family Dwellings CP (B) 479 75¢ (3rd Proof)
Hot Water Supply By Gas for Single Family Dwellings CP (B) 489 1945 75¢ (2nd Proof)
Internal Plastering CP (B) 481 1945 75¢ (2nd Proof)
Lime Plastering CP (B) 483 1945 75¢ (2nd Proof)
Preparation of Surfaces to Receive Plaster CP (B) 482 1945 75¢ (2nd Proof)

New Zealand

New Zealand Standards

Coal-Tar Creosote for the Preservation of Timber NZSS 401 1944 75¢
Electric Heating-Elements for Hot-Water Containers, Ratings and Methods of Test for NZSS 364 1944 75¢
Salt-Glazed Ware Pipes NZSS 365 1944 75¢

War Emergency Standards

Beans (Excluding Broad Beans) NZSS E.175 1945 25¢
Beetroot NZSS E.181 1945 25¢
Cabbages NZSS E.126 1945 25¢
Cauliflowers and Broccoli NZSS E.170 1945 25¢
Celery NZSS E.171 1945 25¢
Dwellinghouse Construction NZSS E.163 1945 75¢
Inks NZSS E.188-E.192 1945 75¢
Kumaras NZSS E.125 1945 25¢
Leeks NZSS E.176 1945 25¢
Peas NZSS E.174 1945 25¢
Produce Sacks NZSS E.158 1945 25¢
Pumpkins and Squash NZSS E.125 1945 25¢
Rhubarb NZSS E.178 1945 25¢
Sandals, Men's and Women's NZSS E.148 1944 40¢
Silver-Beet NZSS E.127 1945 25¢
Simplified Practice for the Manufacture of Brooms, Brushes, and Mops NZSS E.120 1943 25¢
Table Carrots NZSS E.122 1945 25¢
Table Parsnips NZSS E.123 1945 25¢
Table Swedes (Rutabagas) NZSS E.121 1945 25¢

Foreign Language Standards

The following standards are available solely in the language of the country issuing them. Only the titles have been translated to English.

Argentina

Asbestos Cement Sheets and Tiles IRAM 1511-P
Cold Drawn Seamless Brass Pipe IRAM 2516-P
Cotton Tape for Windings IRAM 2021-P
Fusel Amyl Alcohol IRAM 1037-P
Fusel and Synthetic Amyl Acetates IRAM 1038-P
Format of Envelopes IRAM 3003-P
Hot Rolled Seamless Steel Pipes for Pressures Above 25 kg/cm^2 and Temperatures Up to 400 degrees C IRAM 2506-P
Industrial Acetone IRAM 1036-P
Lithopone IRAM 1004-P
Method of Notched-Bar Impact Test on Metallic Materials IRAM 106-P
Method of Tensile Test for Metallic Materials at Atmospheric Temperature IRAM 102-P
Method of Test of Dielectric Strength of Apparatus for Domestic Use IRAM 452-P

Nomenclature and Symbols for Malleable Cast Iron Threaded Fittings IRAM 2509-P
Non-Alloyed Steels for Cementation IRAM 529-P
Normal Butyl Alcohol IRAM 1039-P
Organic Removers (for paint) IRAM 1053-P
"Perilla" Oil IRAM 1043-P
Rotating Electrical Machinery IRAM 2008-P
Steel Castings IRAM 527-P
Transformers IRAM 2018-P

France

Clamp Screw with Hexagonal Head: Dimensions E27-215 1944
Clamp Screw with "Violin Key" Head: Dimensions E27-214 1944
Clockmaking—Alarm Clock:
Alarm Setting Mechanism and Release, Terminology E16-003 1944
Balance Wheel and Escapement, Terminology E16-004 1944
Barrel Movement of Alarm, Terminology E16-001 1944
Center and Minute Movement, Terminology E16-002 1944
Gear Trains and Wheels, Terminology E16-005 1944
Clockmaking—Wheelwork of Weight-driven Clocks: Drum with Auxiliary Spring: Terminology E16-006 1944
Diameters and Speeds of Pulleys; Driving and Driven E22-001 1944
Drilling Jig Bushings; Fixed Bushings E21-001 1944
Drilling Jig Bushings; Removable Bushings E21-002 1944
Household Apparatus for the Production of Hot Water by Gas:
Commercial Designations; Principal Characteristics; List of Standardized Models D35-027 1944
Terminology; Classes and Types; Heating Power; Capacity: Heating Time D35-025 1944
Terminology; Principal Characteristics of Apparatus D35-026 1944
Household Apparatus for the Production of Hot Water by Gas: Connections for Water, Gas, and Condensation; Vent D35-226 1944
Household Apparatus for the Production of Hot Water by Gas: Space Occupied and Fixing D35-327 1944

France—(Continued)
Household Equipment—Apparatus and Utensils:
Cast Iron Kettles, English Type D22-403 1944
Cast Iron Kettles, Norman Type D22-402 1944
Porcelain Bowls D25-603 1944
Porcelain Cups and Saucers for Institutions D25-602 1944
Porcelain Milk Jugs for Institutions D25-604 1944
Porcelain Plates for Institutions D25-601 1944
Round Cast Iron Covers with Central Handle D22-404 1944
Round Cast Iron Covers with Water Reserve D32-405 1944
Household Equipment—Apparatus for Cooking, Heating, and Refrigeration: Apparatus for the Production of Hot Water by Gas, Technical Specifications D35-225 1944
Household Equipment—Apparatus for Cooking, Heating, and Refrigeration: Rules for Testing Apparatus for the Production of Hot Water by Gas D35-525 1944
Lubricating Devices:
Oil Cups with Hinged Lid E28-201 1944
Oil Cups with Turning Cap E28-202 1944
Manufacturing Gages for Rounds and Fillets E11-001 1944
R.P.M. of Transmission Shafts E22-003 1944
Removable Drilling Jig Bushings: Fastening Arrangement; Fastening Screw E21-003 1944
Rigid Fastenings—Bolts and Nuts for Plates with Large Bolts E22-409 1944
Rigid Fastenings—Bolts and Nuts for Removable Plates and Plates with Small Bolts E22-407 1944
"Violin Key" Head for Clamp Screw E27-209 1944
Vocabulary of Gears—Bevel Gears with Right-hand Teeth E23-003 1944
Weighing Apparatus:
Bearings for Scales and Balances E12-033 1944
Knife Edges for Scales and Balances E12-002 1944
Platforms for Scales and Small Weighbridges E12-001 1944

New Standards in ASA Library

For the information of ASA Members, the American Standards Association publishes a selected list of standards received by the ASA Library. The list below includes only those standards received recently which the ASA believes are of greatest interest to Members.

These standards may be consulted by Members at the ASA Library, or copies may be obtained from the organization issuing the standard. The address of the organization is included for convenience in ordering.

Associations and Technical Societies

Aircraft Industries Association of America (610 Shoreham Building, Washington, D. C.)

National Aircraft Standards for:
Bearing-Heavy Duty Inner and Outer Races, Non-Separable, Single Row Needle NAS 290 (Revised July, 1945)
Bolt-Internal Wrenching-Steel NAS 144-150, 152, 154, 156, 158, 172, 174, 176 (Revised July, 1945)
Insulation-Space and Air Duct Thermal NAS 197
Knob, 1⅛ Cubical Plastic Knob NAS 126 (Revised May, 1945)
Knob, One Inch Diameter Knurled Plastic Knob NAS 168 (Revised May, 1945)
Knob Control NAS 120, 121, 123, 124 (Revised May, 1945)
Solderless (Pressure) Terminals for Electric Cables-Specification NAS 193 (Revised July, 1945)
Standard Indentors and Nests for Applying Mechanical Terminals NAS 79 (Revised July, 1945)
Stud-Coarse Thread NAS 183
Stud-Fine Thread NAS 184
Terminal-Electrical, Mechanical NAS 39 (Revised July, 1945)
Washers-X4130 or Equivalent, 125,000 to 145,000 PSI, Countersunk & Plain Types NAS 143 (Revised July, 1945)

The American Institute of Electrical Engineers (33 West 39th Street, New York 18, N. Y.)

Aircraft D-C Apparatus Voltage Ratings, Report on No. 700 March, 1945 (Proposed AIEE Standard for one year's trial use)
Electrical Power Distribution for Industrial Plants $1.00 (Not an AIEE Standard)
Fuses Above 600 Volts, Standards for No. 25 March, 1945 40¢

American Iron and Steel Institute (350 Fifth Avenue, New York 1, N. Y.)

Hot-Rolled Alloy Steels—Open Hearth and Electric Furnace Bars, Bar-Strip, Billets, Blooms and Slabs Steel Products Manual-Section 10 (Revised June, 1945) 25¢
Manufacturers' Standard Practice Section 8 Carbon Steel Bars May, 1945
Manufacturers' Standard Practice Section 15 Carbon Steel Wire Rods May, 1945
Steel Products Manual Section 9 Cold-Finished Steel Bars and Shafting (Revised Edition)
Tentative Hardenability Bands Contributions to the Metallurgy of Steel-No. 11 July, 1944 (Published in cooperation with the Society of Automotive Engineers, Inc)
Tin Mill Products—Tin Plate, Terne Plate, Black Plate Steel Products Manual-Section 14 June, 1945 25¢

The American Society of Mechanical Engineers (29 West 39 Street, New York 18, N. Y.

1945 Addenda to:
Material Specifications, and Welding Qualifications Power, Locomotive, and Low-Pressure Heating Boiler Codes Unfired Pressure Vessel Code

American Society for Testing Materials (260 South Broad Street, Philadelphia 2, Pa.)

As a service to Company Members, the ASA maintains a sale file of all ASTM standards. They can be purchased from the ASA Sales Department at 25 cents each except where otherwise noted.

Standard Classification of:
Cast Copper-Base Alloys, B119-45

Standard Definitions of:
Terms Relating to Refractories, C71-45

Standard Method for:
Evaluating the Degree of Resistance to Blis-

tering of Coatings of Paint, Varnish, Lacquer, and Related Products on Metal When Subjected to Immersion or Other Tests Involving Exposure to Moisture or Liquids, D714-45
Mercurous Nitrate Test for Copper and Copper Alloys, B154-45
Panel Test for Resistance to Thermal and Structural Spalling of Fireclay Plastic Refractories, C180-45
Panel Test for Resistance to Thermal and Structural Spalling of High Heat Duty Fireclay Brick, C107-45
Panel Test for Resistance to Thermal and Structural Spalling of Refractory Brick, C38-45
Panel Test for Resistance to Thermal and Structural Spalling of Super Duty Fireclay Brick, C122-45
Tumbler Test for Coal, D441-45
Turpentine Test for Grease Resistance of Paper, D722-45

Standard Methods of Analysis of:

Aluminum Silicate Pigment, D718-45
Barium Sulfate Pigments, D715-45
Diatomaceous Silica Pigment, D719-45
Magnesium Silicate Pigment, D717-45
Mica Pigment, D716-45
Chemical Analysis of Refractory Materials, C18-45
Sampling and Grading Rosin, D509-45
Surveying and Sampling Soils for Highway Subgrades, D420-45

Standard Method of Test for:

Accelerated Aging of Vulcanized Rubber by the Oven Method, D573-45
Compressive Strength of Preformed Block Type Thermal Insulation, C165-45
Degree of Staining of Paper by Alkali, D723-45
Dielectric Strength of Anodically Coated Aluminum, B110-45
Kerosine Number of Roofing and Flooring Felt by the Vacuum Method, D727-45
Sealing of Anodically Coated Aluminum, B136-45
Weight of Coating on Anodically Coated Aluminum, B137-45

Standard Methods of Test for:

Coarse Particles in Pigments, Pastes, and Paints, D185-45
Covering Capacity and Volume Change Upon Drying of Thermal Insulating Cement, C166-45
Thermal Conductivity of Materials by Means of the Guarded Hot Plate, C177-45
Wire and Felt Sides of Paper, D725-45

Standard Specifications for:

Brass Wire, B134-45
Butanol (Normal Butyl Alcohol), D304-45
Copper-Silicon Alloy Wire for General Purposes, B99-45
Magnesium Ingot and Stick for Remelting, B92-45
Soft or Annealed Copper Wire, B3-45
Soft Rectangular and Square Bare Copper Wire for Electrical Conductors, B48-45
Tinned Soft or Annealed Copper Wire for Electrical Purposes, B33-45
Zinc Sulfide Pigments, D477-45

Tentatives

Acid Number of Dark Rosin, D465-45T
Acidity of Benzene, Toluene, Xylenes, and Similar Industrial Aromatic Hydrocarbons, D847-45T
Air-Setting Refractory Mortar (Wet Type) for Boiler and Incinerator Service, C178-45T
Bonding Strength of Air-Setting Refractory Mortar (Wet Type), C198-45T
Cast Allyl Plastic Sheets, Rods, Tubes, and Shapes, D819-45T
Conditioning of Rubber and Plastic Materials for Low-Temperature Testing, D832-45T
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Degree of Wet Curl of Paper, D826-45T
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Evaluating Degree of Resistance of Traffic Paint to Abrasion, Erosion, or a Combination of Both, in Road Service Tests, D821-45T
Expansion (Pin Test) of Copper and Copper-Alloy Tubing, B153-41T
Five-Degree Xylene, D845-45T
Flexural Strength of Preformed Block Type Thermal Insulation, C203-45T
Identification and Quantitative Analysis of Synthetic Elastomers, D833-45T
Indentation of Rubber by Means of the Durometer, D676-44T
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Industrial Grade Benzene, D836-45T
Industrial Grade Toluene, D842-45T
Industrial Grade Xylene, D844-45T
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Lead-Coated and Lead-Alloy-Coated Soft Copper Wire for Electrical Purposes, B189-45T
Leaded Yellow Brass Sand Castings for General Purposes, B146-45T
Manganese in Industrial Waters, D858-45T
Magnesium-Base Alloy Permanent Mold Castings, B199-45T
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Operating Light and Water Exposure Apparatus (Carbon-Arc Type) for Testing Paint, Varnish, Lacquer, and Related Products, D822-45T
Paraffins in Industrial Aromatic Hydrocarbons, D851-45T
Permeability of Vulcanized Rubber or Synthetic Elastomers to Volatile Liquids, D814-44T
Phthalic Anhydride Content of Alkyd Resins and Resin Solutions, D563-45T
Physical Testing of Quicklime and Hydrated Lime, C110-45T
Ply Adhesion of Paper or Vulcanized Fibre, D825-45T
Preparation of Steel Panels for Testing Paint, Varnish, Lacquer, and Related Products, D609-45T
Refined Solvent Naphtha, D838-45T
Refractoriness of Air-Setting Refractory Mortar (Wet Type), C199-45T
Resistance of Vulcanized Rubber or Synthetic Elastomers to Crack Growth, D813-44T
Sampling and Testing Pine Tars and Pine-Tar Oils, D856-45T
Sampling Boiler Water from Stationary Boilers, D860-45T
Silica in Industrial Waters, D859-45T
Specific Gravity, Color, and Hydrogen Sulfide and Sulphur Dioxide Content (Qualitative) of Industrial Aromatic Hydrocarbons, D853-45T
Ten-Degree Xylene, D846-45T
Tensile Breaking Strength of Paper and Paper Products, D828-45T
The Term Glass, C162-45T
Terms Relating to Naval Stores and Related Products, D804-45T
Testing Plywood, Veneer, and Other Wood and Wood-Base Materials, D805-45T
Thermal Conductivity of Fireclay Refractories, C202-45T
Thermal Conductivity of Insulating Fire Brick, C182-45T
Thermal Conductivity of Refractories, C201-45T
Total Aluminum and Aluminum Ion in Industrial Waters, D857-45T
Total Immersion Corrosion Test of Stainless Steels, A279-44T
Vitrified Clay Filter Block for Trickling Filters, C159-45T
Wet Tensile Breaking Strength of Paper and Paper Products, D829-45T
Young's Modulus in Flexure of Natural and Synthetic Elastomers at Normal and Subnormal Temperatures, D797-44T

Compilations of Standards:

Plastics, ASTM Standards on (Specifications, Methods of Testing, Nomenclature, Definitions) May, 1945 $2.75
Soaps and Other Detergents (With Related Information) ASTM Standards on (Specifications, Methods of Analysis, Definitions of Terms) September, 1945 $1.50

American Welding Society (33 West 39 Street, New York, N. Y.)

Code of Minimum Requirements for Instruction of Welding Operators (Part A—Arc Welding of Steel 3/16 to 3/4 In. Thick) 1945 50¢
National Association of Better Business Bureaus, Inc (308 Frederick Building, Cleveland 15, Ohio)
A Guide for Retail Advertising and Selling Third Edition (Revised) (With dictionary index of trade terms, standards, descriptions, etc.)

American Wood-Preservers' Association (1437 Eye Street, N. W., Washington 5, D. C.)

Creosote-Petroleum Solution, Tentative Standard Specification for 63a
Inspection of Preservative Treatment of Wood, Tentative Standard Instruction for 33d
Preservative Treatment of Oak Ties and Lumber By Pressure Processes, Tentative Standard Specification for 52b
Preservative Treatment of Pacific Coast Douglas Fir, Intermountain Douglas Fir and Western Hemlock Piles By Pressure Processes, Tentative Standard Specification for 41c
Preservative Treatment of Pacific Coast Douglas Fir, Intermountain Douglas Fir and Western Hemlock Poles By Pressure Processes, Tentative Standard Specification for 51b
Preservative Treatment of Pacific Coast Douglas Fir, Intermountain Douglas Fir and Western Hemlock Ties and Lumber By Pressure Processes, Tentative Standard Specification for 38c
Preservative Treatment of Pole Butts By the Non-Pressure Process—Incising Method, Standard Specification for (Correction in table) 43d
Preservative Treatment of Southern Pine Ties and Lumber By Pressure Processes, Tentative Standard Specification for 53c
Preservative Treatment of Western Red Cedar Poles By Pressure Processes, Tentative Standard Specification for 57b

ASA Standards Activities

American Standards

American Standards Approved Since Our October Issue

Copper-Base Alloy Forging Rods, Bars, and Shapes, Specifications for ASTM B 124-45; ASA H7.1-1945 (Revision of ASTM B 124-39T; ASA H7-1939)

Copper Water Tube, Specifications for ASTM B 88-45; ASA H23.1-1945 (Revision of ASTM B 88-41; ASA H23.1-1941)

Free-Cutting Brass Rod and Bar for Use in Screw Machines, Specifications for ASTM B 16-45; ASA H8.1-1945 (Revision of ASTM B 16-44; ASA H8.1-1944)

Method of Test for Accelerated Aging of Vulcanized Rubber by the Oven Test Method ASTM D 573-45; ASA J5.1-1945 (Revision of ASTM D 573-42; ASA J5.1-1943)

Methods of Test for Coarse Particles in Pigments, Pastes, Paints ASTM D 185-45; ASA K42.1-1945 (Revision of ASTM D 185-37; ASA K42-1937)

Practice for the Inspection of Elevators, Inspectors' Manual A17.2-1945 (Revision of A17.2-1937)

Screw Threads for High-Strength Bolting B1.4-1945 (Formerly approved as American War Standard B1.4-1942)

Test for Carbonizable Substances in Paraffin Wax ASTM D 612-45; ASA Z11.50-1945 (Revision of ASTM D 612-43; ASA Z11.50-1943)

Test for Carbonizable Substances in White Mineral Oil (Liquid Petrolatum) ASTM D 565-45; ASA Z11.49-1945 (Revision of ASTM D 565-43; ASA Z11.49-1943)

Test for Distillation of Gasoline, Naphtha, Kerosine, and Similar Petroleum Products ASTM D 86-45; ASA Z11.10-1945 (Revision of ASTM D 86-40; ASA Z11.10-1940)

Test for Flash and Fire Points by Means of Open Cup ASTM D 92-45; ASA Z11.6-1945 (Revision of ASTM D 92-33; ASA Z11.6-1933)

Test for Knock Characteristics of Motor Fuels ASTM D 357-45; ASA Z11.37-1945 (Revision of ASTM D 357-44; ASA Z11.37-1944)

Test for Saponification Number of Petroleum Products by Color-Indicator Titration ASTM D 94-45; ASA Z11.20-1945 (Revision of ASTM D 94-44; ASA Z11.20-1944)

Standards Being Considered by ASA for Approval

Automatic Station Control, Supervisory and Telemetering Equipments (Revision of C37.2-1937)

Sponsor: Electrical Standards Committee

Gas Burning Appliances:

Approval Requirements for Central Heating Gas Appliances (Revision of Z21.13-1943)

Approval Requirements for Domestic Gas Ranges (Revision of Z21.1-1942)

Approval Requirements for Gas Space Heaters (Revision of Z21.11-1942)

Approval Requirements for Gas Water Heaters (Revision of Z21.10-1944)

Listing Requirements for Low Water Cutoff Devices, Z21.36

Sponsor: American Gas Association

Method of Compiling Industrial Injury Rates (Revision of Z16.1-1937)

Sponsor: National Safety Council

Pipe Threads (Revision of B2.1-1942)

Sponsors: American Gas Association; American Society of Mechanical Engineers

Prevention of Dust Explosions:

Code for Explosion and Fire Protection in Plants Producing or Handling Magnesium Powder or Dust (Revision of Z12.11-1942)

Code for the Installation of Pulverized-Coal Systems (Revision of Z12.1-1942)

Code for the Prevention of Dust Explosion Hazards in the Plastic Industry

Sponsor: National Fire Protection Association

Standards Submitted to ASA for Approval

Methods of Testing Shellac Used for Electrical Insulation, ASTM D 411-44; ASA C59.18-1944

Vulcanized Fibre, NEMA, ASA C59.20

Sponsor: American Society for Testing Materials

Standards Submitted to ASA for Reaffirmation

Rubber Insulating Tape, Specifications for (ASTM D 119-38; ASA C59.6-1939)

Rubber Matting for Use Around Electrical Apparatus or Circuits not Exceeding 300 Volts to Ground, Specifications for (ASTM D 178-24; ASA C59.6-1935)

Testing Molding Powders Used in Manufacturing Molded Electrical Insulators, Methods of (ASTM D 392-38; ASA C59.10-1941)

New Project Initiated

Refrigeration Nomenclature

Sponsor: The American Society of Refrigerating Engineers

American War Standards

American War Standards Available

Picture and Sound Synchronization Marks (For 35-Mm and 16-Mm Sound Motion Picture Release Negatives and Other Preprint Material), Z52.53-1945, 20¢

War Standards Under Way

Machine Tool Electrical Standards (Revision of C74-1942)

Photography, Z38

Diffuse Transmission Density, Z38.2.5

Photography and Cinematography, Z52

Motion Picture Cameras

Distance Calibration of 16-mm Motion Picture Camera Lenses, Z52.51

Field of View of 16-mm Motion Picture Camera View Finders Having Parallax Adjustment, Z52.49

War Standards Under Way—(Continued)

Mounting Dimensions for 16-mm Camera and Recorder Film Magazines (400-Foot Gear-Driven Type), Z52.52

Mounting Dimensions for 16-mm Camera and Recorder Magazines (200-Foot Belt-Driven Types), Z52.66

Mounting Dimensions for 16-mm Camera and Recorder Magazines (400-Foot Belt-Driven Type), Z52.67

Photographing Aperture of 16-mm Sound Motion Picture Cameras, Z52.47

Photographing Aperture of 16-mm Silent Motion Picture Cameras, Z52.48

Registration Distance and Lens-Mounting Dimensions for 35-mm Motion Picture Cameras

Registration Distance and Mounting Dimensions of 16-mm Motion Picture Camera Lenses, Z52.50

Motion Picture Projection Equipment

Class II Service Model 16-mm Sound Motion Picture Projection Equipment, Specification for, Z52.13

Motion Picture Release Prints

Leaders and Trailers for 16-mm Sound Motion Picture Release Prints Made from 16-mm Original Material, Z52.31

Printer Loss in 16-mm Sound Motion Picture Prints, Method of Determining, Z52.40

Motion Picture Test Films

Warble Test Film Used for Testing 16-mm Sound Motion Picture Equipment, Specification for, Z52.32

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Exposure Markings for Between-the-Lens Shutters, Z52.62

Exposure Markings for Focal Plane Shutters, Z52.64

Exposure Time of Focal Plane Shutters, Method of Determining, Z52.65

Performance Characteristics of Between-the-Lens Shutters, Method of Determining, Z52.63

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Enlarger, Photographic, Specification for, Z52.23

Radio Noise, Methods of Measuring, C63

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Electrical Protection, Part VI

Methods and Materials of X-Ray Protection, Part III

Specific Applications for 400 Kv and Lower, Part IV

Specific Applications of One and Two Millions, Part V

Use and Storage of Radium in the Field of Industrial Radiography, Part II

Screw Threads, B1

Buttress Threads

High-Duty Studs in Light Alloys

Instrument Threads

Stub Acme Threads

Unification of Screw Threads

Women's Industrial Clothing

Jackets for Outdoor Wear (Slide-Fastener Closure), L17.6

Jackets for Outdoor Wear (Fly-Type Button Closure), L17.5

Wood Poles, O5

Miscellaneous Conifers

Ultimate Fiber Stresses of Wood Poles, O5aWS

News About ASA Projects

Allowances and Tolerances for Cylindrical Parts and Limit Gages, B4—

The final draft of the specification on Limits and Fits for Engineering and Manufacturing, B4.1/9, unanimously approved by the ASA War Committee on Cylindrical Fits, has been sent to the Sectional Committee on Allowances and Tolerances for Cylindrical Parts and Limit Gages, B4, as a basis for its further work on this subject. Copies of the draft were submitted also to the British Standards Institution and the Canadian Standards Association, and were discussed by the American, British, and Canadian delegations to the conference on Unification of Engineering Standards held in Ottawa, September 24 to October 6, 1945. In accordance with the decision made at its February 15, 1945, meeting, the ASA War Committee will now disband.

Photography (Other than Cinematography), Z38—

Sponsor: Optical Society of America

A second draft of the Proposed American Standard Practice for Microfilms, Z38.7.8, has been sent to letter ballot of the sectional committee.

Places of Outdoor Assembly, Z20—

Sponsors: Building Officials Conference of America; National Fire Protection Association.

Some 10,000 copies of a draft of the proposed standard providing safety requirements for outdoor grandstands, tents, and other places of assembly were circulated in July by the National Fire Protection Association. The comments received are to be considered by the sectional committee at a meeting scheduled for December 14. It is hoped that adjustments in the draft at this meeting will permit letter ballot action of the committee to be followed by action by the sponsors, the National Fire Protection Association, and the Building Officials Conference of America, so that submittal will be made to the ASA in the late winter.

Safety Code for X-Rays, Z54—

A meeting of the members of the War Committee on X-Rays, Z54, and of the subcommittees is scheduled for January 9, 1946. The meeting will consider the final drafts of Parts II through VI of the Safety Code for the Industrial Use of X-Rays, Z54.1. The committees which are preparing Part II on methods and materials and Part V on X-rays at voltages of 1 million and two million volts have found it necessary to do some research to determine values which the committees wish to present.

Safety Code for the Prevention of Dust Explosions, Z12—

Sponsors: National Fire Protection Association; U. S. Department of Agriculture.

The new Code for the Prevention of Dust Explosion Hazards in the Plastics Industry, Z12.16, recently submitted to the ASA for approval carries into a new field the standardization work which has already been effective in some 15 other fields. This new standard as well as the two revisions submitted at the same time are now out to letter ballot of the Standard Council. The revised standards are the Code for the Installation of Pulverized-Coal Systems superseding the Code for the Installation of Pulverized Fuel Systems (revision of Z12.1-1942) and the Code for Explosion and Fire Protection in Plants Producing or Handling Magnesium Powder or Dust (revision of Z12.11-1942). All three standards were developed by the Committee on Dust Explosion Hazards of the NFPA operating as a sectional committee under the sponsorship of the American Standards Association. All new material and proposed changes were published and widely circulated to all concerned before action was taken.

Safety Glass for Motor Vehicles, Z26.1-1938—

Sponsors: National Conservation Bureau; National Bureau of Standards

The American Trucking Association, Inc, and the Interstate Commerce Commission have asked the American Standards Association to study the possible use of plastics in windshields and windows of motor trucks, in connection with a possible revision of the American Standard Safety Code for Safety Glass for Glazing Motor Vehicles Operating on Lone Highways Z26.1-1938.

"As a result of industrial research and extensive use during the war, certain clear sheet plastics appear to have possibilities for use as windshields and windows of motor trucks," the American Trucking Associations declared in its request. "This clear plastic can be molded into shapes not possible with glass," it stated. "For example, for use in a motor truck windshield it is conceivable that a curved windshield could be made which would eliminate the front corner posts of a truck cab. Such a design would greatly increase the driver's spread of vision and might reduce accident hazards by providing better unobstructed vision."

Certain problems arise in connection with the use of plastics, however, the ATA explains, for example, some sheet plastics might be easily scratched and thus become useless. Plastics would also be so resistant to breakage that they could hardly be broken in order to release the driver in cases of accidents.

The American Trucking Associations told the ASA that they would be glad to help in a standardization study of plastics and could arrange for actual field testing on motor trucks. The American Standards Association has referred the request to the Sectional Committee on Specifications and Methods of Test for Safety Glass, Z26.

Women's Industrial Clothing, L17—

Two new standards for women's jackets are going out to letter ballot of the ASA War Committee. These are the proposed American War Standard for Jackets for Outdoor Wear (Slide-Fastener Closure), L17.6 and proposed American War Standard for Jackets for Outdoor Wear (Fly-Type Button Closure), L17.5. These latest drafts result from circulation last summer of some 300 companies and other groups interested in the production or use of women's industrial clothing. All comments received were considered by the War Committee in a meeting August 1 and the drafts were revised to take care of the changes accepted by the committee.

Wood Poles, 05—

A final draft of Proposed American War Standard Specifications and Dimensions for Wood Poles—Miscellaneous Conifers, 05, has been sent to letter ballot of the ASA War Committee. This is the second draft prepared since the organization of the war project which was requested by the Office of Price Administration. The material considered by the War Committee was circulated to the members of the Sectional Committee on Wood Poles, 05, and to others concerned for comment. All comments received were considered at a meeting of the War Committee in September, and a draft prepared and circulated again for further comment. The draft now under consideration is the result of the comments received.

Standards for Work in Compressed Air, Z28—

Sponsor: International Association of Industrial Accident Boards and Commissions.

The drafting subcommittee has scheduled a meeting for December 10 to consider a draft of a proposed standard for work in compressed air.

New SAE Board to Aid Government in Postwar Engineering Program

A technical board of 23 high-ranking automotive engineers has been appointed by the Society of Automotive Engineers to coordinate and supervise all technical committee activities of the SAE, according to an announcement by SAE president J. M. Crawford appearing in the magazine *Automotive and Aviation Industries.*

The board has already begun the work of converting the SAE War Engineering Program to the peacetime service of industry and of the government. In line with a request from the Chief of Ordnance, U. S. Ordnance Department, the board will also ". . . direct the development of a new cooperative engineering program . . . for broadening and intensifying the wartime 'functional teamwork' of SAE and Ordnance engineers to keep American motorized military equipment superior to that of potential enemies," the article states.

L. R. Buckendale, engineering vice-president of The Timken-Detroit Axle Company, Detroit, Michigan, has been named chairman of the technical board.

Member-Bodies Study Question of Congressional Charter for ASA

REPRESENTATIVES of 22 Member-Bodies of the American Standards Association met September 28 with the ASA Board of Directors to consider the report of a special committee appointed by the Board to study the question of a Congressional Charter for the ASA.

The committee's report recommended that the ASA should apply for a Congressional Charter for the following reasons:

(*a*) ASA operations are now on so large a scale that prudence requires incorporation;

(*b*) Incorporation would make it possible for the ASA to accept bequests and own real property;

(*c*) It would protect the Member-Bodies, the members of the Board, the Standards Council, and the staff.

The opinion of the conference was unanimous that the American Standards Association should be incorporated and the discussion indicated that the majority of those represented preferred incorporation through the Federal charter.

Representatives of some of the Member-Bodies present at the meeting recommended that the ASA apply for incorporation under the laws of one of the states rather than through Congressional action. This recommendation was made, it was explained, because a great deal of time might pass before Congress could consider such a charter, and in the opinion of those making the suggestion a state charter would meet the needs of the ASA. The majority believed, however, that the Federal Charter would have a decided advantage over a state charter because it would give the ASA Congressional recognition which would be helpful not only in its work with government organizations in the United States but also in its relations with other national standards associations. Representatives from other countries have frequently expressed surprise that the ASA did not have such Federal recognition, it was explained. Since the work of the ASA is national in scope, not local, a Congressional Charter would be more appropriate than incorporation under State laws, it was declared.

It was unanimously agreed that the committee should continue its work.

Welding Society Elects Dr. Hess President

Dr. Wendell F. Hess has been elected president of the American Welding Society, an Associate Member of the American Standards Association, for the year 1945-46. Dr. Hess is Professor of Metallurgical Engineering and Head of the Welding Laboratory at Rensselaer Polytechnic Institute.

It was the active agitation of Dr. Hess for the recognition of welding as a separate engineering subject that led to the establishment of a welding laboratory at Rensselaer in 1937, the only one of its kind at that time. The equipment for the laboratory was designed and arranged by Dr. Hess. Following this, in 1938 the first Welding Research Committee fellowship was set up for the study of the spot welding of low-carbon and stainless steels. Other schools soon followed suit and many fellowships were established by companies and also under government sponsorship. The study of welding was greatly accelerated by our entrance into World War II when it became especially important.

Dr. Hess has been connected with

the American Standards Association since 1940, when he was appointed member-at-large on the Sectional Committee on Electric Welding Apparatus, C52.

Henry W. Bearce Retires

Henry W. Bearce, chief of the Division of Weights and Measures of the National Bureau of Standards since 1940, has retired from government service after 37 years.

Mr. Bearce entered the Bureau in 1908 and for a number of years was employed in the Volumetric Section of the Division of Weights and Measures. While in that section he carried out several research projects on the density and thermal expansion of liquids. According to the *Technical News Bulletin*, September, 1945, a publication of the National Bureua of Standards, extensive tables based on Mr. Bearce's findings currently serve throughout the oil petroleum industry in the United States and to a considerable extent in other countries as the accepted basis for reducing observed volumes and densities of these liquids to standard conditions.

More recently Mr. Bearce has been active in standardization work, particularly as related to interchangeable manufacture of screw threads and limit gages. He served as secretary of the National Screw Thread Commission from 1918 to 1933, and since 1939 as secretary of the Interdepartmental Screw Thread Committee. In 1944 Mr. Bearce was a member of the Joint U. S.-Canadian Technical Mission that went to London to discuss with British experts the possibility of establishing unified American-British-Canadian standards (ABC Standards) primarily for screw threads, and limits and fits. Following the London Conference, Mr. Bearce was chairman of an American subcommittee in charge of establishing unified screw thread nomenclature and symbols, in cooperation with the British and Canadians.

Mr. Bearce has served on four sectional committees organized under the procedure of the American Standards Association. They are: Standardization and Unification of Screw Threads, B1; Allowances and Tolerances for Cylindrical Parts and Limit Gages, B4; Wire and Sheet Metal Gages, B32; and Hose Coupling Screw Threads, B33. (Mr. Bearce also served as chairman of the B33 Committee).

Dr. Wilmer Souder, of the section on thermal expansivity, dental research, and identification, has been designated acting chief of the Weights and Measures Division.

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